THE AMERICAN ARCHITECT

VOL. CXVIII WEDNESDAY, DECEMBER 15, 1920 NUMBER 2347

Waste Spaces in New York

Impressions of an Interview with Thomas Hastings, F. A. I. A. (Carrere & Hastings), in Which a Proposed Scheme for the Reformation of New York's Waterfront Was Outlined

EDITOR'S NOTE: *The following article is not a verbatim report of the conversation with Mr. Hastings regarding this topic, but rather the impressions left upon the writer's mind by what Mr. Hastings said. It is the first of a series of exclusive interviews granted* THE AMERICAN ARCHITECT *by men prominent in the profession of architecture and the arts allied to it. The remaining interviews will appear in early numbers of this journal.*

A CITY grows in two ways.

Its growth is governed either by natural evolution or by deliberate design. Boston is an example of the former; Washington of the latter; New York of neither. It is of New York that I wish to speak because New York is very typical of a number of cities in this country which show lack of plan and disregard for those areas which are nothing more than waste spaces as they stand now, and which should and could be converted into architecturally correct centers or spaces.

The housing problem accentuates this. While the people of New York City are finding it difficult to get living quarters, a great amount of land lies idle —from either a commercial or architectural point of view—along the waterfront. I refer to those many streets which lead to the river and which cannot justify their existence from any standpoint. They are not beautiful. Their value as avenues for traffic is negligible, since the traffic they bear does not justify their existence from a financial standpoint. They lead simply to the river, in a great many instances to the river itself, and not to any particular building or other destination. They stand condemned as efficient streets, as beautiful streets, or as useful streets.

They are waste areas.

Now, the problem of any city is to so conserve its waste areas, especially when they exist in this form, that land will produce at its maximum from a commercial, housing or recreational standpoint. Land which is being used for streets over which so little traffic moves that it may be properly looked upon as negligible is doing neither of these two things. Its only justification for existence would lie in the fact that it was being used as streets; yet in this instance even that justification is not possible.

The fundamental cause of this is, of course, the so-called gridiron scheme of city planning, which is, as I have said, neither planning nor the result of natural evolution. . . . It is simply a disease. . . . Without regard to the usefulness or beauty of proposed streets, they have been cut here and there in a haphazard, arbitrary sort of fashion. Having been cut, they create blocks. Upon those blocks buildings of one sort or another take place. And every street of the sort of which I speak is about 1,200 square feet of wasted space; space on which houses should have originally been built. . . .

What is the obvious solution?

The elimination of such streets. Not only obvious but economically sound and architecturally correct. By eliminating those streets units would be created of fairly large dimensions, in which an architect could most certainly build more economically and with a greater regard for architectural fitness. As an arbitrary example, let us say that five out of every six streets are waste spaces. The proper thing to do would be to close the five useless streets, create a building plot of respectable dimensions, and so improve the sixth street that traffic along it would move better.

The closing of the five streets would give to those who were to build upon that area a five-block plot, plus the streets. They should be given free by the city to those who buy the blocks as an inducement for building—a very substantial inducement, by the way. The average street is approximately 60 feet wide by about 200 feet long; 1,200 square feet of free land. A builder could properly look upon that land as profit from the very start, since all houses erected on such an area would return their profit on the investment on their cost alone. What builder would not welcome a chance to put up houses on free land?

I speak here of houses because I believe that, for

Copyright, 1920, The Architectural & Building Press (Inc.)

XUM

the areas which I refer to, houses should be the ultimate aim. The housing problem accentuates such a statement; and regard for the architectural fitness of New York's waterfront strengthens it. Nor do I mean elaborate or costly houses. The type of house which the man of moderate means could buy would be the proper sort. Such a type could be built on five block areas (including the streets) on a very economical basis. It would amount to miniature communities, each unit being a community unto itself. Unlimited possibilities would be offered the architect for planning. A street could be cut through the center of the unit, at right angles to the closed streets, and from this the necessary walks and short streets could branch out to the houses themselves. Then, in the center of the unit, running parallel with the closed streets, a street could be cut to meet the central avenue. This would provide easy access to the unit, and would give the architect unlimited possibilities for artistic treatment of the scheme. . . .

As regards New York's waterfront particularly, it would be splendid. Moderate sized sea walls could be erected along the waterfront, all designed and built artistically. Back of this wall the units would look out upon the river, with its traffic and color. Imagine a number of such units, one after the other, along the waterfront. Each would be architecturally fit; each would contribute its individuality to the general whole; each would be beautiful. The whole would be an unbroken series of communities, one beside the other, so built and so arranged that monotony of design would be done away with. Each, being a community, could be given the fullest possible treatment for style and proportion in the plans, without an expensive building program.

As to the economy of the scheme, I thing it necessary merely to point to the fact that group construction is always cheaper than the individual problem. By group construction I am not referring for a moment to the "standardized" house, but to the fact that one hundred houses, properly designed for the moderate pocketbook and possessing architectural quality, can be built cheaper, per house, than the single unit.

The houses which would be built along the waterfront would attract a splendid tenantry. What could be more delightful than living along New York's waterfront in well-designed and architecturally beautiful communities such as these would be? The man of moderate means and thorough culture would be only too glad to own a home so situated, and so surrounded by other good-looking and artistic homes. There would be no crowding; there would be land about each home, where gardens could be planted; and there would be the beauty and coherence of a well-conceived group plan, with architectural similarity stamped indelibly upon the group. . . .

To those who look upon this as some sort of dream let me say this: The waste spaces referred to exist; the laws of the city should permit of the sale of such property, and co-operative organizations without number might be quite willing to supply the money for the purchase of the property.

Allow me to become a trifle personal and say to architects: "How would you like to be given the opportunity to design such communities, and thus preserve the architectural possibilities of a waterfront as beautiful as we know New York's waterfront could be made by the right sort of planning and building?"

"Would you have the city control or regulate the architectural phase of these communities, so that they presented either a single, definite architectural scheme or so that various periods of architecture would not exist side by side, thus destroying what might be termed architectural harmony?" the writer asked Mr. Hastings.

"Architectural harmony, as you term it, is beyond the province of official control or regulation," Mr. Hastings explained. "The city should be concerned only with those phases of building which relate to the health of the community, such as ventilation, light, drainage and overcrowding. It is not the duty or business of government, large or small, to interfere in any way with the aesthetic side of a community's existence. That is a matter which regulates itself, to a certain extent; but, whether it does or does not regulate itself, it is no part of the official side of a community to interfere with it.

"I am speaking now purely in regard to architectural harmony. There is a phase of your question which I would like to speak of, however. That is in regard to the disfigurement of a city. Opposite the New York Public Library, there is a large electric sign, which is ugly and which mars the composite beauty of that portion of Fifth avenue. That sign was erected by a man whose income is sufficient without the added revenue which the sign itself may produce. There is no necessity for it. It is a blot upon the city. Looking from the Public Library, one is confronted by a glaring, ugly sign. That should not only be regulated, but *prohibited*. It has nothing to do with architectural regulation, but it *is* concerned with the community, in that it actually mars whatever beauty architects have succeeded in imparting to that community. As such, it is a disfigurement; and disfigurements of that nature should never be permitted by a city.

I should like to say something regarding the selection of sites for memorials, war memorials particularly. It seem to be the unfortunate practice in a number of cities to select such sites arbitrarily, without inquiring into the memorial itself, and what it

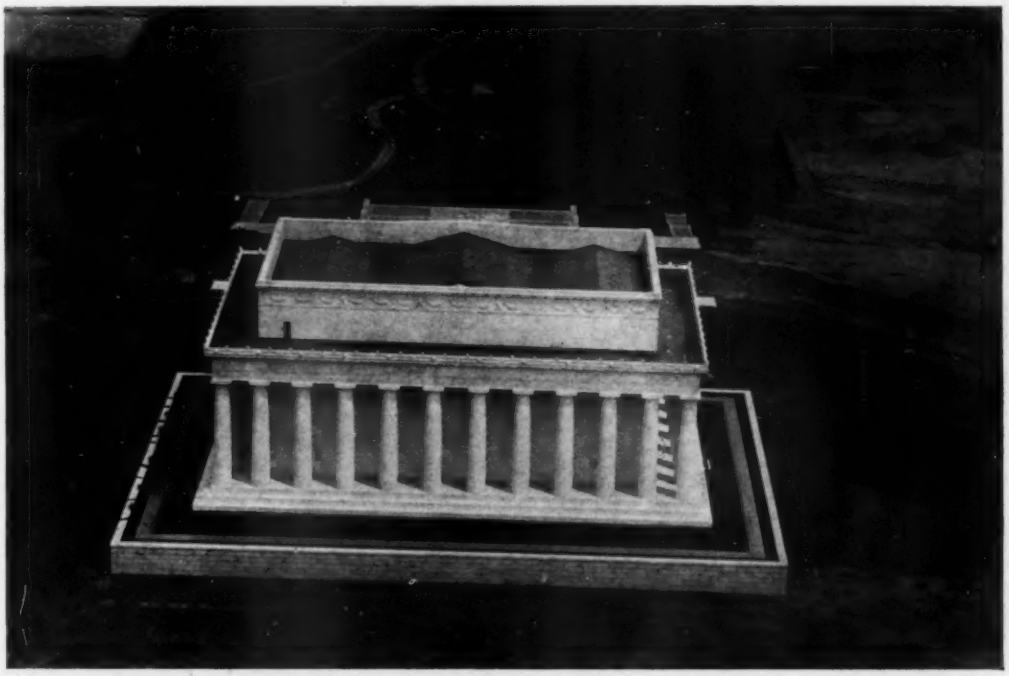
seeks to exemplify or preserve to posterity. A war memorial, for example, seeks to commemorate a present condition, a present achievement. It is put up in honor of an ideal, and as such it is usually erected so as to honor those who fought or worked for that ideal.

This necessarily means that everyone in this generation at all concerned with the nation and with the individuals who typified the spirit of that nation are interested in such a memorial. In other words, it should be erected to serve (if it is to be of service) or to be accessible by (if it is to be purely decorative) the greatest number of people in the community where it is erected. It is not a memorial for a limited or selected group of the community, but one for the whole community. Is it not correct, then, to so place it that it may be seen or used by the maximum number of the population of the community?

This seems a simple statement of fact, yet it is only too true that cities seem to ignore it. Memorials of various sorts are often placed in spots where a very small part of the community's population may reach them readily, use them, or look upon them in the course of their day's activities. To place a war memorial in Battery Park in New York City illustrates this point. Or at 250th street. Neither location is in line with the heaviest circulation. Neither is readily accessible to the majority of people in Manhattan Island. Neither would afford a view of the memorial, or use of it, to the thousands who pour into the lower part of New York during the week days.

Fifth avenue, at Twenty-fifth street, offers a splendid site in this particular instance. The avenue carries the most traffic, the circulation is by far the heaviest, and it would be readily accessible to the thousands who daily earn their livelihood in lower New York. It would, in a word, possess centrality.

That is the point I wish to make. Centrality—the choosing of a site which will make the memorial of this nature most readily accessible to the greatest number of people, either directly or indirectly—should always govern the selection of such sites.

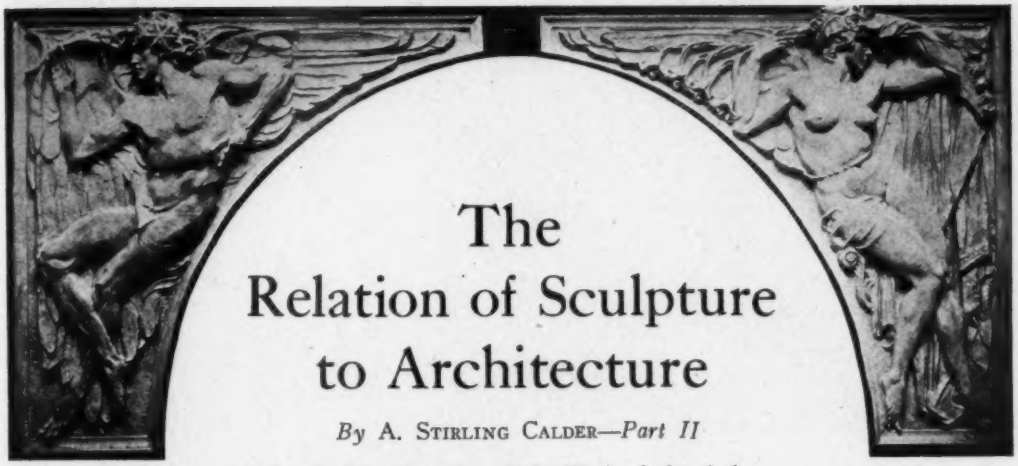


AIRPLANE VIEW—THE LINCOLN MEMORIAL, WASHINGTON, D. C.
HENRY BACON, *ARCHITECT.*

MODEL FOR MARBLE FOUNTAIN—THE LEAGUE OF NATIONS—IN GARDEN OF JULIAN R. TINKHAM, MONTCLAIR, N. J.

FOUNTAIN OF ENERGY—PANAMA-PACIFIC INTERNATIONAL EXPOSITION

A. STIRLING CALDER, *SCULPTOR*



The Relation of Sculpture to Architecture

By A. STIRLING CALDER—*Part II*

Illustrated by Examples of the Work of the Author

THE elimination of all non-essentials in architectural design will make room for those plastic ideas of our time for which in classic design there is no place. By stripping construction to the bare bones of necessity, and engrafting thereon ideas, we beget our own child. It certainly is a refreshing possibility to contemplate. Let us begin our thinking in sculpture and architecture! Painting can take care of herself. But both painting and architecture would be enriched by a renewal of related vitalities. Sculpture is a ponderous matter and depends intimately on architecture for its grander uses. It is a significant fact that the most inspired sculptor of modern times found it impossible to wait for architecture.

It may be safely said that sculpture that is only ornament is not sculpture at all. What then of all the pretty details we are constantly regaled on? They had better not be done at all, except by students as training to do something else. The civilized world is familiar with neo-classic design and is fed up with it. It is not possible actually to do the real classic, and our copies have no thrill because perverted. They depend for success solely on refinement and refinement persisted in is weakness. It is not to be denied that they sometimes possess beauty, but it is a weary beauty smelling of the lamp. We can go no farther on these highways. Another cause for the failure of so-called architectural sculpture of general appeal arises from the practice of considering sculpture as something that can be applied or dispensed with successfully at any stage of design. Built-in sculpture for exterior or interior should be considered from the first inception of the structure. Only by this early fusion of architectural and sculptural thought can the happy combination of use and beauty be achieved. Sculpture may be structural. The use gives character to the beauty. It must have a use and be beautiful in that use. Otherwise it is like a woman who is lovely to contemplate but otherwise distressing.

"OUR LADY"
A STUDY IN FRENCH GOTHIC STYLE.

The only serious mistake possible to make about any art is to conclude that it is finished. A closed book of law, once learned and thereafter ever to be prac-

SOUTH PROW—THE ISLAND, VISCAYA. FROM THE WATER-COLOR BY JOHN S. SARGENT.
PAUL CHALFIN, *ARCHITECT*

ticed with thought only of execution. True, all arts are governed by laws, but laws are being constantly challenged because man made and not infallible, and either approved, revised or repealed. So it is in the arts. So in sculpture. My plea for a forward looking practice of sculpture is not based on the desire for novelty or originality in the first place. It is based on the desire for pertinence and stimulation in the first place, then character and if possible beauty in its development. I place character before beauty. When a thing arrests our attention as being pertinent, well equipped for a purpose, we say it has character; and that implies satisfaction as to its right to be. If it is also pleasing to a marked degree we say it is beautiful.

MODEL FOR THE SOUTH PROW—THE ISLAND, VISCAYA
ESTATE OF JAMES DEERING, MIAMI, FLORIDA
PAUL CHALFIN, *ARCHITECT*

FUTURE development in plastic art is to be expected in three ways. First by the evolution of styles in design growing out of old styles, with the consequent element of invention which must be allowed the possibility of extension to totally new types. Second, by original combinations of the materials used in sculpture made possible by such designs which would probably include certain materials not now employed. Third by distinctive, typical, pertinent and inventive technical methods in the treatment of these materials. I cannot believe that the last word ever to be said on any of these heads has been spoken. It would be a hopeless outlook if that were true. Nor am I satisfied with the excuse commonly offered, that we are in a transitional period. All periods are transitional because they occur in change. It is disproved by the many detached individual attempts in expressive plastic design now being made. The germs of growth are alive and working. In fact these very experiments by the brave scouts of the advance are keeping alive popular interest in sculpture. Any good sculptor who is more than a technical modeller can give new interest to old forms by infusion of character. The degree of interest so infused amounts in rare cases to new style. But it is inevitable that without daring innovation, elimination and grafting of new thought the practice of "the styles" must grow more and more feeble. We sometimes hear of a copy "that is better than the original" but that is nonsense. No copy of an original that is worth copying can be so good.

Because the Greeks built very noble temples to house their sculpture of the gods is not a good reason why American architects should so persistently copy those temples to house our government department clerks, our bank clerks, our congregations for Christian worship, or our libraries. Our needs are different. May not our architecture be different also, sometimes? Based frankly on these needs, then beautiful in our own kind. All deference to the Greeks and to the Italians and all the others who have been at one time or other excellently free in plastic spirit for whom I have great admiration. I admire them and their works so much that I want to penetrate into their minds to learn the moods of life that compelled such admirable creations. If we could learn the humanity of their impulses we might also gain the confidence, the brave fervor that is now lacking to express ourselves. There is a difference between admiring antiquity, taking lessons from it, and being enslaved by it. There are other sources that point the same lesson in a more primitive way. We may well look about and sense the charm of such direct work as the wood carvings of some of our

A SEA MOTHER

XUM

aborigines. The totem poles and carved panels of our Alaskan Indians, some of which may be seen at the Museum of Natural History, are vigorous purposeful works of art. Skillfully simple and complete, without a trace of that forced aestheticism that is the disease of art.

The love of form is primitive, an instinct shared by all men to a degree, but reaching its highest growth in advanced civilizations that are never far removed essentially from savagery. Only scratch the surface, the savage is beneath. The instinct for form is part of our very physique, and the art that most purely embodies manifestations of this instinct is sculpture. Whether it was ever popular in a general sense to a greater extent than today is a question. Perhaps not. Most likely not. If it is the most exclusive of the arts in scope it probably follows that it must also be exclusive in appeal. Of course to the mass all art is taken for granted like life itself. There is no concern about it. It is merely sensed dully except by the rare spirits who live keenly. Climate has much to do with the character and amount of sculpture possible of popular acceptance in a given locality. The Puritans frowned on art and some of their influence still persists in certain hard dry conceptions and unimaginative technique.

PORTRAIT sculpture is the most popular branch of plastic art. The average person is willing to be interested in character and beauty as expressed in form individuality. The exclusiveness of plastic requirements are most manifest in portraiture. Ruskin wrote that "the portrait bust that is nothing more is third-class work." And he was right in his day when classes in art were admitted. But sculptured portraits, whether statue, bust, relief or medallion that are worth anything, are also fine sculpture. The royal Egyptian portraits in granite and stone, Greek and Roman work in portraiture, Donatello's splendid busts and statues, Pisanello's medals, a wealth of later work, are all of a very high order. Sculpture should concern itself only with life, the accessories, dress or ornament must either be eliminated, simplified to extremist severity, or treated as allegory. The greatest successes of American sculpture have been in portraiture, but the application of

ARCHWAYS—THROOP INSTITUTE, PASADENA, CAL.
MYRON HUNT & ELMER GREY, *ARCHITECTS*

such work to comprehensive designs is all but unknown. The part that portraiture may be made to play in stately designs for monumental interiors, in libraries, theatres, institutions, banks, etc., is considerable. Monumental, allegorical and realistic portrait busts and medallions lend themselves to varied and striking use architecturally. Full length portrait relief panels may be used in well lighted in-

ENTERPRISE
FINAL IN GROUP OF NATIONS OF THE WEST. P. P. I. E.

teriors and have monumental grandeur that is beyond painting. I know of no such uses yet made. Far from being exhausted the proper uses of sculpture in our day must be re-discovered.

Much remains to be done in the matter of the development of plastic design when two materials are employed. The great majority of our public statues are of bronze, practically always mounted on granite pedestals. The statues may be excellent and the pedestal excellent, each in itself, but very rarely are the two happily or interestingly combined. Rarely is any use in design made of the differences in materials, in quality of texture, color and strength. St. Gaudens and his architect saw the value of study in this respect and have left works: the Peter Cooper Memorial and the Sherman Memorial, proving its subtle value. But this was only a beginning which

THE BATHER

should be carried on; an infinity of delightful design lies beyond.

Decorative Sculpture is usually considered work of the second class. Even sculptors have accepted such classification, but it is untrue because based on differences in use, not on quality of art, which is the only true measure of excellence. There are but two kinds of sculpture whether it be large or small, ar-

A NUDE

XUM

chitectural, decorative, monumental, ideal, realistic, personal or impersonal or prefixed with any other qualifying word. It is either good sculpture or inferior sculpture. The most trivial utensils have been dignified by the beauty of their form, and the subtle art of their modelling and carving and painting by the Greeks, Italians and the rest. Vases, urns, mirrors, furniture, utensils of the table, armor, lamps. The Tanagra statuettes are little more than toys in one sense, yet many are triumphs of dignity and beauty. If one cares for beauty there is no limit to it. All must be beautiful from the cradle to the grave, inclusive. And why not? We have our lives.

Much sculpture is housed in the same way as painting, the result of taste and chance, and there are those who suffer no shocks from the most incongruous collections provided the individual examples have merit. They are human documents, forsooth, and as such all considerations of time, race and style are insignificant in comparison. This is wise. What each art can give of beauty is the essential test, and all beauty has the same root. Better collections of many beauties related only in quality than attempts at harmonious selection that achieve only anaemic aestheticism. There is also place for the purist point of view when it can retain vigor. But that requires very great vigor indeed.

MODEL FOR A MANTEL IN FAIENCE FOR SUN-ROOM OF IOWA HOUSE OF MRS. E. N. HARRIMAN, NEW YORK
GROSVENOR ATTERBURY, *ARCHITECT*

SCULPTURE drawing directly from nature and life makes new contributions to proved plastic form. These are then gradually conventionalized and absorbed into architecture. The plastic spirit seeking for expression has invented forms beyond the realm of nature. Centaur, Minotaur, sphinx, griffin, satyr, mermaid, faun, Gods, angels, devils. The Egyptian, Greek, Hindoo and Gothic world systems of fascinating plastic imagery. Man has invented them all for his greater satisfaction and man may and will again invent more gods as needed with a following of unheard of zoomorphs to furnish forth new systems of symbols for his discoveries. The creative instinct, without which art would perish, is only thus appeased. It is the mission of some artists to blaze the trail in this pioneer kind of sculpture. Their productions may be rude and uncouth in execution but some germs of inventive insight for truth are thus added painfully and slowly to the sum total of human statement.

The grotesque is a legitimate branch of all art and has flourished side by side with beauty in most periods of notable activity. It has great value as a foil to pure beauty, in fact it is even a quality of beauty. The depth, the saturnian quality of it. When thus consciously used sculpture attains a strength and range that is dramatic. My impression is that this quality of conscious appreciation of the value of the grotesque has not been manifest in American sculpture. We have unconscious examples, the re-

sult of abortive attempts at beauty, but they are distressing. There is nothing distressing about the conscious or true variety. It is an element of truth possessing humor and lusty vigor. It serves to strengthen what might tend to over sweetness in beauty. It is a tie to Earth.

Sculpture, and art generally, is not for the enjoyment of the wealthy only, but for all who understand. It is the generous Playground of the World on which poor and rich alike may pause, mingle and forget

THE SIOUX, "KILL-AN-ENEMY"

the daily struggle. It is merely that those who happen to be favored by fortune have the privilege of returning joy to their less fortunate fellows by the use of wealth power. All efforts must be paid for. If the art work is had cheaply it is the artist who pays with privation and neglect. The cost of art is as nothing compared to its value. It is as necessary as the bread we eat. It is the bread of the spirit, demanding sustenance always. If not of the nobler kind, still of some kind, always. In this fair world there is plenty of everything for all, only distribution is vexing. Inequalities of wealth power are probably necessary to insure action. However this may be there are certain men and women irresistably drawn to art as a vocation with no assurance of its bread-winning power. To the sculptor the world is a plastic mass waiting to take the impress of his thoughts. Their realization is an imperative duty. If a few of these are true, he has done well.

IT is interesting to consider the relation of artist to patron, laity, government. Imagination is constantly proposing. Authority is constantly disposing. How did these mysterious matters work out in the heyday of sculpture in Greece? Did Phidias have to talk up his conceptions for the Parthenon or was a free hand accorded him by Pericles? What were the real motives that decided the erection of the Parthenon and its sculpture? Was it an act of pure faith, devotion and piety, or a calculated effort to impress with wonder the multitude who must regard it as a miracle.

Michelangelo received certain commands from the Popes. But the real urge came from the demons within his tormented soul. Man toils when it is no longer a necessity because it is a relief. We must be about some work or play. We know not the reason any more than we know the reason of life. Art has this mysterious power of giving relief. It is beyond reason. Only he who has toiled has the right in the end to say, all is vanity.

In our sometime called melting pot for the fusion of races of the western world, education is a pressing necessity. And this must include not only that education with Americanization as its end, but also that very important education in the elemental means of communion, the arts. On the mutual good will and understanding of the races much depends. The sources of our supply of new blood from Europe includes races old in their peculiar national development of the arts. They bring much of value in return for what they receive. Assurance of confidence and unity of aim in life may be taught in art. In sculpture by plastic manifestations of our common humanity in origin and destiny.

Sculpture is part of our heritage. An art capable of the greatest grandeur only to be carried on by contributions of our own, not merely of technical excellence which is admirable, but also by things of the spirit which are more admirable. The creative impulse to plastic design exists with us but it has now no outlet. A public forum for the exhibition and judgment of sculpture is needed. American plastic art is not plastic enough! We are trifling indoors, when we should be lustily toiling for beauty in the open. There, in our open places, seen of tumultuous men in moments of impressionability and quickened

XUM

judgment, let there be set up sculpture that is the direct reflex of this life, curbed and refined only by law and love, breathing new angles of thought on the meaning of visible life, and of that other life, the life of the spirit that haunts us all, of whatever creed, or of none but the elementally superstitious to which art also ministers. Let such images of growth be erected in temporary materials, for our deliberate consideration. Let them be so considered publicly for a considerable time. Long enough to decide their merit or demerit. Then let their ultimate execution depend on what friends and champions they can win as works desired.

Ever searching for the divine calm that life itself is denied, art seeks to set up her lovely idols of consolation. This most precious quality is far removed from practicability in its accepted sense, yet it is just this quality that is valuable to promote humanity, sympathy and understanding. Without a trace of the irrespressible optimism of art Humanity must have perish from the Earth. Life with no spark of it is an unconscious and useless thing.

Miles of Cliff Dwellings Found in Colorado Canyon

TWO new finds of prehistoric ruins in Colorado have been reported to Prof. A. Jeancon, field man of the United States Bureau of Ethnology, who is now in Colorado on important work regarding the antiquities of the State.

James Loftis, a ranchman of Youghal, a small settlement in the northwestern corner of Colorado, came recently to Denver, it is reported in the New York *Tribune*, with a detailed description of a canyon of cliff dwellings just west of the junction of the Yampa and Green rivers. These dwellings have just been discovered as a result of curiosity on the part of Loftis and two other homesteaders who have taken up land in this wild part of the western slope.

"Where the Yampa and the Green come together," said he, "there is an inaccessible canyon wall to the west. This side the wall is not so steep. Trailing cattle last summer on the near side of the river, I noticed near the top of the practically sheer wall what appeared to be a long, deep opening, resembling a great pair of lips with flat, stone-colored teeth. I asked some of the settlers in that new country what it was, but no one knew

"After my work for the summer was done I went up the Yampa and crossed a ford, gaining the other side. When I was above the place I went to inspect I lowered myself by a sort of a rope ladder. It was too short to reach the ledge, but afforded from above a view of walls of houses, caved-in roofs of what was evidently cedar, covered with tiles of baked clay, of rooms, large pieces of pottery and wicker baskets filled with what I took to be grain. Covered with dust and leaves, were skeletons in two of the rooms in which I could look.

"They apparently extended for miles, principally in the canyon of the Green River. Although the postmaster at Youghal and other settlers say they have noticed the unusual formations in the canyon, no attempts had been made to investigate because of the inaccessibility. I saw no trail or any sign of ingress."

Mr. Loftis gave Professor Jeancon and the State Historical and Natural Society a list of names of men who know of the ledge.

The other discovery is reported from the Escalante Forest, southwest of Grand Junction. Huge mounds that heretofore have been passed by as natural formations, scores of them, are said to contain evidences of houses and temples, such as have been uncovered in the Mesa Verde.

Early in November one of the mounds was opened when a ranchman started to build a dug-out for the storage of potatoes. He came across pottery of a high glaze and artistic design.

Both the finds have been reported to Washington, and will be investigated.

"This more than ever confirms the statement that Colorado is the cradle of this ancient nomadic civilization and that intelligent work will uncover ruins and relics of incalculable value to science and history," said Professor Jeancon.

Boston Architectural Club News

The Club has organized a drive to raise money to house the Robert S. Peabody library. Their leaflet tells the story in every detail, and follow-up work by members soliciting contributions is under way. This marks a very important epoch in the life of the Club. The new room will be a memorial to the club members killed in the war.

The B. A. C. Annual will deal this year with current work, and a very varied and worthy collection of drawings and photographs has been secured.

GENERAL VIEW OF SHAFT AND CRUSHER HOUSES

Engineers and Architects in Artistic Collaboration

The Shaft Houses at Ishpeming, Mich., Conclusively Proving the Satisfactory Results That Ensue in Well Conducted Team Work

By ARTHUR T. NORTH

JUST at this time, when there has been a controversy in the engineering press, somewhat acrimoniously conducted, as to the relationship between architects and engineers when these two professions combine on the one structure, it is extremely gratifying to be able to present so notable an example of just what architects and engineers can accomplish when harmoniously inter-related as in the present instance of the shaft houses at Ishpeming, designed by Condron Co., engineers, with George W. Maher, F. A. I. A., acting as consulting architect.

Through constant association certain things become accepted and approved. This applies to buildings as well as to any other activities, for building types are usually the result of well formed habits in designing. And it is through indifference born of constant association that architects are prone to give but little time to structural or engineering design, when, if they showed the proper interest and a well developed spirit of co-operation, they might, as in the present instance, aid in transforming a most commonplace structure into one of decided architectural merit.

Such a condition is inherently wrong, for every building, no matter what its purpose, has a right to some measure of beauty, and having this right, it should undoubtedly receive it. The traveler through the mining regions of this country has undoubtedly been impressed with the sheer ugliness of the shaft houses that rear their awkward heights over fields already homely in their appearance through the litter and debris that always surrounds mining locations. The variance in the requirements of these shaft houses is so small that they assume almost identically the same characteristics of unsightliness no matter what the type of mining may be.

These structures have been designed by the structural engineers, the urgency of whose tasks has been so great that they have been erected simply to serve expediency and no effort for sightliness has been attempted. The mines of the Cleveland Cliffs Iron Co., at Ishpeming, Mich., have been in operation for more than thirty years, and from present indications they have even a longer life ahead of them. Two principal shafts occupy this area and these are 820 feet apart. The shaft house or head frames that top them are prominent and have been until recently unsightly features of the landscape. The early structures were made of framed timbers, sometimes enclosed with corrugated iron. Through the stress of hard usage and the deterioration incident to exposure to the elements the frames became loosened, decayed,

XUM

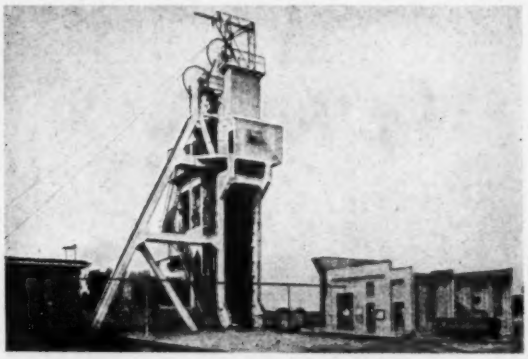
vibrating and deflecting excessively, and it was necessary at intervals to replace them.

MR. LUCIEN EATON, the engineer and superintendent of the mining company, in considering three plans for replacement, was impressed with the idea that, as in the present instance the mining operations might be looked forward to as cover-

A STRUCTURAL STEEL HEAD-FRAME

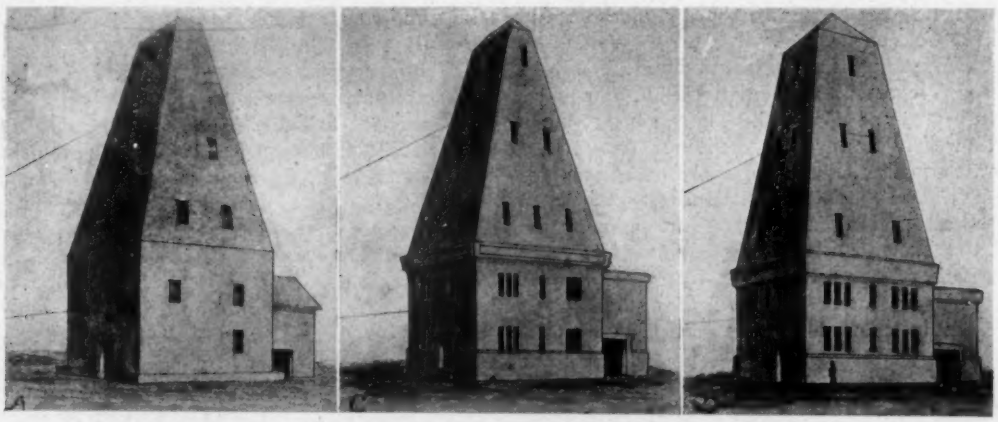
ing a long period, the shaft heads should be constructed of a more permanent material and determined that they should not be short lived structures. The three plans that Mr. Eaton considered were: first, to rebuild with wooden frames similar to those now in use; second, to erect a structural steel frame, or, third, a concrete structure. On considerations of the estimated costs it was shown that it would be uneconomical to rebuild of timbers and in the course of a few years be confronted with the same problem again. Structural steel was then considered, but as it was very costly and difficult to obtain in 1919, thereby creating a possibility of a period of delay in construction, it could not be considered. It was therefore finally decided to build these shaft heads of concrete. The conditions for the erection of a concrete structure were entirely favorable. Suitable gravel was available near the site, and unskilled labor plentiful, and for these reasons reinforced concrete could be used with considerable economy and the work carried forward in such a manner as would not interfere with the operation of the mines.

Sketches were accordingly prepared by Mr. Eaton for a concrete structure that would enclose the existing timber frames and support the beams and girders necessary to carry the main hoist and counterbalance sheaves. Mr. Eaton's sketches included plans, elevations and sections, but no particular study was



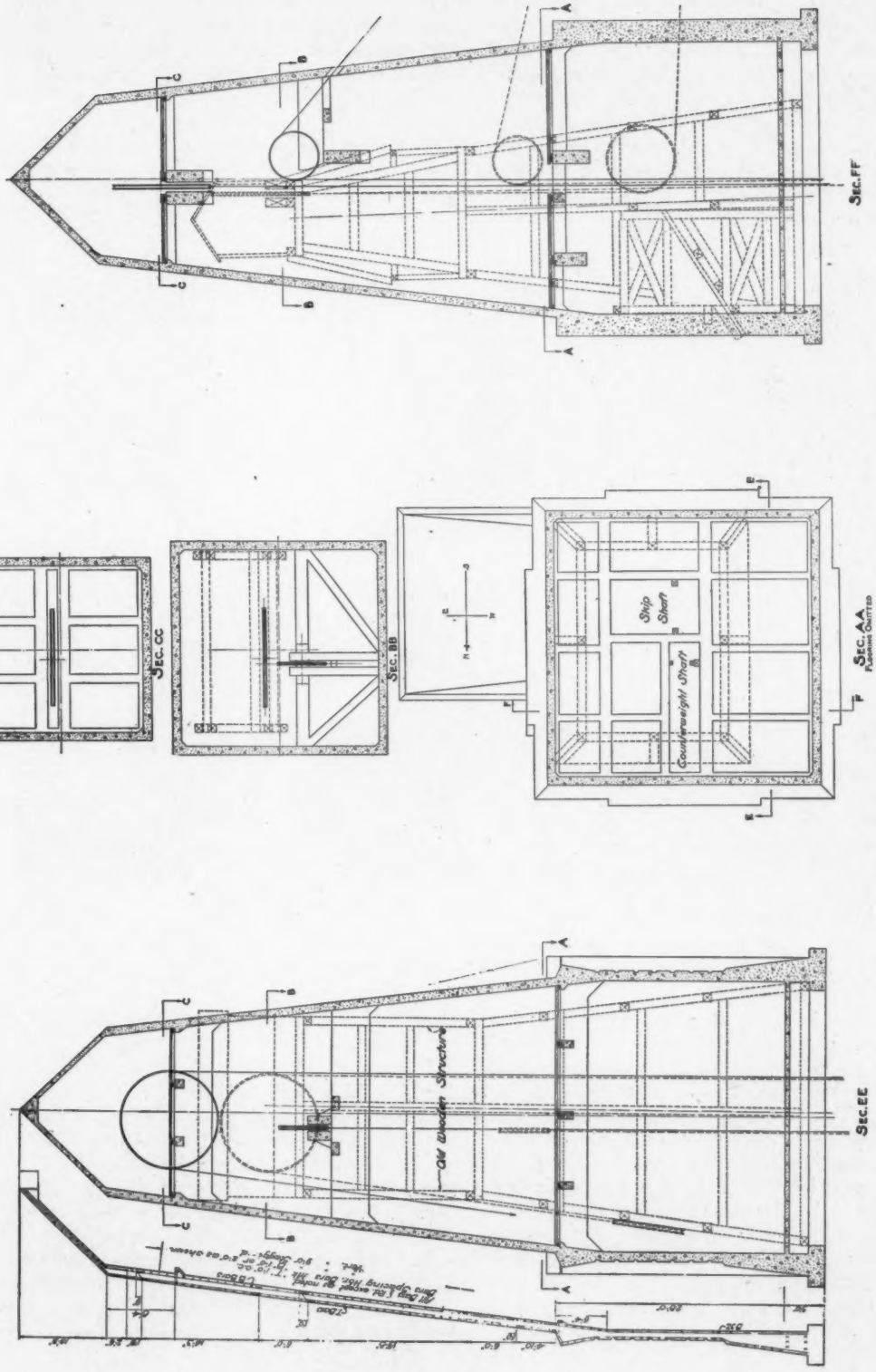
A TYPICAL CONCRETE HEAD-FRAME

made as to the general appearance of the finished concrete structure. When these plans were submitted to Condron Co., consulting structural engineers, for investigation and report as to the practicability and probable cost, and also as to the design and details of construction, this engineering corporation, with a



A—THE ORIGINAL DESIGN. C—DESIGN OF CONSTRUCTION ENGINEERS, RETAINING THE RECTANGULAR TOP. D.—THE RESTUDIED DESIGN WITH SQUARE TOP. SEE OTHER PLATES FOR FINAL DESIGNS AS COMPLETED BY THE ARCHITECT

XUM



VERTICAL AND HORIZONTAL SECTIONS, SHAFT HOUSE A

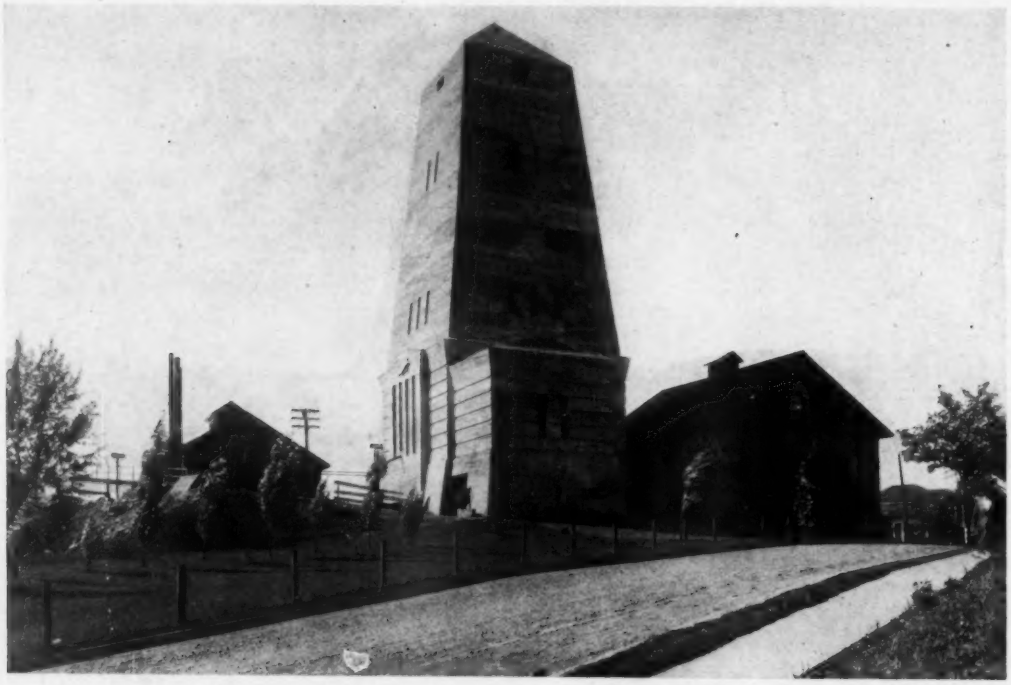
SHAFT HOUSES AT CLEVELAND CLIFFS IRON CO., ISHPEMING, MICH.

THE CONDRON COMPANY, *CONSULTING STRUCTURAL ENGINEERS*
GEORGE W. MAHER, F.A.I.A., *CONSULTING ARCHITECT*

XUM

very proper regard for the architectural aspect of their work, prepared certain tentative designs with a view to improving the appearance of the shaft heads, and these studies in perspective they submitted to Mr. Eaton.

Reference to the illustrations will show the progressive steps made in the designing. The first step was to render a perspective based on the plans submitted. Closely housing the timber frame resulted in a superstructure of the pyramidal form. The engineers further developed this by changing the form somewhat and arranging the windows in a symmetrical manner. The rectangular plan was found to be unsuited to a structure of this type, and a design was prepared with a base square in plan. The outlines were well studied, allowing for the limitations of enclosing an existing structure and keeping the mine in constant operation. At this stage of the development of the design, Condron Company recommended to the owner that they retain George W. Maher, F. A. I. A., as consulting architect, to study the problem from its architectural viewpoint. This was done, and Mr. Maher rearranged the fenestration and designed a simple and effective scheme of ornamentation, retaining the form of the structure as submitted to him. It will be seen that the well trained hand of the architect added that which made the structure one that suggests all the elements of good architectural design.



SHAFT HOUSE A, WITH CONNECTING CAR HOUSE ON THE FRONT

SHAFT HOUSES AT CLEVELAND CLIFFS IRON CO., ISHPEMING, MICH.

THE CONDRON COMPANY, *CONSULTING STRUCTURAL ENGINEERS*
GEORGE W. MAHER, F.A.I.A., *CONSULTING ARCHITECT*

THE plan adopted consists of a base 35 ft. square and 28 ft. high, from which rises a truncated pyramid 55 ft. high, 33 ft. 6 in. square at the base and 20 ft. 6 in. square at the top. This in turn is surmounted by a pyramidal cap 10 ft. 9 in. high. The total height is 93 ft. 6 in.

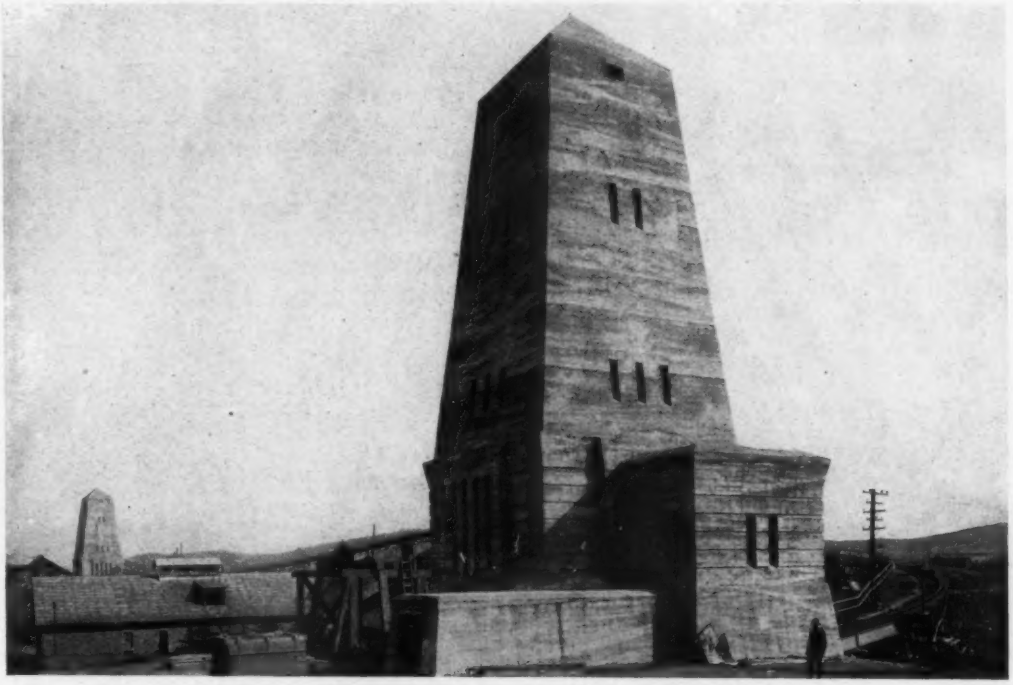
In a paper presented at the Lake Superior meeting of the American Institute of Mining and Metallurgical Engineers in August, 1920, by J. Ellzey Hayden and Lucien Eaton, the construction of these two shaft houses is described. In the January, 1921, issue of the Journal of the Western Society of Engineers Mr. T. L. Condron, M. W. S. E., Mem. Am. Soc. C. E., will also describe these buildings.

The actual construction work was started July 21, 1919, and both structures were completed December 11, 1919. During the last three weeks of that time severe cold weather was experienced, requiring the

utmost care to prevent the freezing of the concrete. The total cost of the two structures, including the sheaves, flooring, lighting, heating, tearing down the old frames, moving tracks, chutes, supervision and engineering was $56,543.00, or $32.51 per cubic yard of concrete. The cost of some of the more important items, reduced to a basis per cubic yard were: Gravel, $2.17; cement, $3.21; forms, $11.84; mixing and placing, $3.20; reinforcing, $4.79. Less than $50 was expended for dressing the exposed surfaces of the structures. Seventeen hundred and forty cubic yards of concrete were required and the building of the forms and placing of reinforcing was done in seventy-seven working days, and fifty-five working days were required for placing the concrete. The foundation for one house was carried down to a depth of 26 ft., while that of the other was carried only to a depth below the frost line.

The engineers of the company estimated the cost of two steel shaft houses at $85,000, exclusive of any loss of time in operation of the mine hoists occasioned by erection of the structural steel. On the basis of this estimate, $28,500 was saved by building of concrete. During the construction there was no interference with the hoisting operations of the mines except for a period of four hours at Shaft A one Saturday night, when it was necessary to stop the hoisting skip while pouring beams.

The aggregate for the concrete consisted of a gravel which was irregularly stained with iron oxide. As a result, the concrete has a variegated or veined appearance with different shades of brown, pink and grey. The effect is very pleasing and gives a distinct character to the surfaces. It is due to this fact that the structures have a charm and distinction that could not be secured with a grey concrete, uniform in shade. One of the greatest objections to concrete buildings is the dreary monotony due to the somber color of the material. The users of this material may well profit by introducing either variously colored aggregates, as in this case, or suitable pigments. An effect can be secured, by the nature of the process, which cannot be produced by any other material. The attractive feature of these effects will be due to the fact that they cannot be accurately predetermined and hence are natural.



SHAFT HOUSE B. HOUSE A IN DISTANCE

The suggestion of Mr. Lucien Eaton, engineer and superintendent, to construct these buildings of concrete instead of steel or wood, and the broad-minded policy of Mr. G. W. Maher and Mr. M. M. Duncan, president and vice-president, respectively, of the

(*Concluded on page 791*)

XUM

Detail of a House in Litchfield, Conn.

(See reproduction of drawing by O. R. Eggers on opposite page)

THE carpenter-architects of the late eighteenth and early nineteenth centuries were very often men of much refinement of mind and undoubtedly the most skilful of craftsmen. While the dominating influences which controlled their work were those gained through knowledge of earlier English examples, they, it would appear, combined with such knowledge a cleverness of adaptation that stamped a certain originality on their own work.

The present illustration is a good example in point. Mr. Eggers has sketched this most interesting "bit" with his usual keen perception of architectural significance. It is a most interesting variation of an often-seen motive of design and will repay careful study.

The sense of domestic seclusion conveyed by this sketch is perfect. It suggests the type of house affected by the upper middle class during the early part of the nineteenth century. There can be no doubt but that houses of this character stimulated better ways of living and higher ideals of citizenship. After the Civil War there was undoubtedly a decadence of our domestic types of architecture which continued for many years. But today we may take comfort in the fact that the development of the country house, by architects in the United States, is reaching the highest dignity and exerting the same influence as did those of the period represented in the present sketch.

LIBRARY
THE DETROIT INSTITUTE

OLD HOUSE, LITCHFIELD, CONN.
THE AMERICAN ARCHITECT Series of Early American Architecture

XUM

EDITORIAL

The Architect and the Engineer

THE line of demarcation between the professions of architecture and engineering is impossible of definition when building construction is considered. This truth is becoming better understood by leaders of both professions who are sufficiently broad-minded to be above selfishness, envy and intolerance.

Building construction as constituted today partakes largely of engineering; structural, mechanical, electrical, heating and sanitary. These elements are of such importance that they must be handled by specialists trained and qualified to do the work. Few men with but an architectural training can successfully manage these details from personal knowledge and experience. It is therefore evident that engineering is an essential element of architecture. Believing this, engineers are not satisfied to surrender the complete control of building construction to the architect and in a very large and important measure they retain control. This insistence is admittedly to the detriment of good architecture.

It must be acknowledged that when architects do not give sufficient attention to the engineering elements that are involved in some degree in every structure the results are disastrous, because poor engineering affects the monetary value of the building through faulty construction and poor mechanical equipment, always expensive to maintain. These factors affect the financial return, the true measurable value, and are fully appreciated by architects experienced in large undertakings. It is true that a building well constructed, heated, lighted, with adequate elevator and sanitary equipment is habitable and serves as a satisfactory housing for its intended purpose. Without these qualities the structure is useless and therefore valueless.

But when to this is applied an artistic design both for interior and exterior treatment, the value is doubled because the simple addition of beauty in form, color and materials compels satisfaction and enjoyment and a certain pride in that possession of the ability to see and enjoy even without actual possession of the property. It being impossible to delimit the function of the architect or the engineer in building construction of major proportions, it would appear that co-operation and collaboration, sincere and unselfish, is the only rational relationship. It is a most pleasing and promising development when such relationships develop and always to the advantage of architecture.

A case in point will be found in the article and illustrations of shaft houses at Ishpeming, Mich., to be found in this issue.

A New Effort to Unionize Draftsmen

ORGANIZED labor has again departed from its legitimate field and is seeking to invade the ranks of professionalism in its effort to unionize the draftsmen in the offices of architects and engineers. The demand which practically amounts to a threat was recently made on the General Contractors' Association of Newark by the Building Trades Council of Newark, N. J., that the Contractors' Association use only plans made by union draftsmen or engineers. This demand was to the effect that after November 1, 1920, union labor composing the building trades council of Newark would do no work on new buildings or other structures for which the plans were not made by union draftsmen or engineers.

When this unionization of draftsmen was first broached by the leaders of labor unions, the American Association of Engineers with its usual promptness and decisiveness pronounced the advocacy of trade union methods by any of its members as a cause for expulsion. While no similar action has been taken by the architectural profession, it would seem as if it should align itself on this principle and thus let it be clearly understood that the professions of architecture and engineering would not submit to any outside domination of its members and would continue as in the past to regulate their affairs through their duly constituted associations. When now more than a year ago the matter of uionizing the draftsmen was taken up in the middle west, it was found then as it has recently been found

XUM

in Newark, that the draftsmen almost to a man were opposed to affiliation with any form of unionism.

The General Contractors' Association of Newark have announced that they will continue to use plans made by non-union men and it will therefore be interesting to watch the result of this action as indicating to just what extent organized labor is disposed to press for the extension of its principles into fields in which it is justly believed they have no right to interfere.

Again the "Artist"

MR. JOHN W. SIMPSON, President of the Royal Institute of British Architects, in an address recently delivered before the Institute, accented the position of the architect as an artist, and failed, according to criticism expressed in the London architectural press, adequately to acknowledge the importance of the architect's many activities that are of the utmost practical and businesslike nature.

The Architect, referring to this address, states that it objects to this over-accentuation of the artist's side of architectural practice as likely to give rise to misconception.

The main reason for this objection is that in the too free use of the word "artist" there is likelihood of misconception, "for an artist may be described in popular parlance as one who does work which—whatever its merits may be—is not practical." *The Journal,* pursuing this line of thought, contends, and rightly, that an architect's work must be practical, and if it fails in so being it does not fulfill its primary function.

"That architecture is a great art," states *The Architect,* "is the common knowledge of those who know anything about it, but, like fundamental and self-evident truths, it is not necessary to insist on it any more than we need constantly insist upon the rotundity of the earth. Again, the greater contains the less, and the less is but a part of the greater, and the term architect is, therefore, greater than that of artist, and conveys a deeper and fuller meaning."

In the foregoing we have a clearly expressed statement of the exact position of the architect as an artist. We find that the primary function of architecture is in the art of *practical* building.

NO one may successfully refute the claims of architects to be classed as artists, but what lessens the value of such a title is the tendency of some members of the profession and some of its publications, to press the claim for the title and ignore the practical elements of the architect's work.

It is unfortunate, and true that to the average mind the word "artist" conveys no other meaning than an attitude of visionary impracticability. And, it is the hard-headed practical man who is, as a rule, the client. While he may have great respect for art, as he understands it, he generally understands that those who practice art are poor business men, and, as his money has been acquired by the most strenuous and practical effort, he may be pardoned if he hesitates to trust its expenditure to one who so insistently "plays up" the art side of his profession, and neglects with obvious intention to demonstrate his business ability.

Before the war, at the time this journal first began the discussion of this phase of architectural practice, it would have been impossible to have secured a patient listener to these arguments. Since then there has been printed in these columns letters from men high in the profession, endorsing this attitude. And now, we have from the ultra-conservative English architectural press, a criticism of the president of the Royal Institute, and the expression of a belief that is in entire concurrence.

The Architect is exactly right that it is no more necessary to state that the architect is an artist than it would be to remark that the earth is round. If architects insist upon being called "artists" they will have no one to blame but themselves if they are taken solely at their own valuation, and find themselves ultimately engaged only on the artistic aspect of building construction.

IN a certain section in New York to be largely occupied by the garment making trade there are no less than twenty major building operations now in progress or nearing completion. We are unable to find a single instance where architects have been retained, work being carried forward by the owners own temporary building organizations. These operating companies have proceeded entirely with only such architectural assistance as might be furnished by architectural employees on their pay rolls. The obvious lesson this teaches lies in the evident refusal of groups of keenly developed business men to acknowledge a like attribute in architects.

Engineers and Architects

(*Concluded from page 787*)

Cleveland Cliffs Iron Company, in recognizing the value of an aesthetic treatment of these designs, deserves the highest commendation. Instead of erecting the usual unsightly headframes, dominating the city of Ishpeming, there now stands two monumental structures, simple, dignified and imposing.

It is fortunate that the designers of these structures were not obsessed with a devotion to classic detail or precedents and attempt to apply them to this project. They did design in a common sense, rational and natural spirit, resulting in a most happy and successful conclusion. Unfortunately these structures are so located that they cannot be studied conveniently in the field, and it is hoped that this presentation will receive the attention it deserves.

Another instance of aesthetic design applied to an engineering structure is that of a coal unloading and storage plant on the East River, New York City. In this case, Mr. Charles Houchin Higgins, Mem. Am. Soc. C. E., developed the contractor-engineer's plans in much the same way Condron Company did. The result is worth studying from both sides of the river. Although readily accessible to a large number of architects and engineers, it has not been given the attention it so richly deserves. It is, nevertheless, gratifying to be able to call attention to these two instances of a departure from the unsightly head house and coal bunker to buildings of structural and aesthetic merit. These instances also indicate the *rapprochement* between architects and engineers, which is sure to increase because it is natural, necessary and holds great promise for future American architecture.

SHAFT HOUSE A AS SEEN FROM SHAFT B

THE CONCRETE NEW EIGHT HOISTING CABLE LEADS OUT OF AN OPENING IN THE WALL NEAR THE HIGH DOUBLE WINDOWS, AND THE MAIN HOISTING ABOUT TEN FEET ABOVE THE GROUND. BOTH CABLES RUN OVER A SUPPORTING FRAME WORK TO ELECTRIC HOISTS IN THE POWER HOUSE BETWEEN THE SHAFT HOUSES

XUM

Criticism and Comment

A Communication from Burt L. Fenner

The Editors, THE AMERICAN ARCHITECT:

On reading in your issue of November 24th, what purports to be my remarks in opening the discussion of "Housing" at the recent meeting of the New York State Association of Architects, I was first amazed, then chagrinned and then amused. I take no exception to the first two paragraphs, but in the next paragraph I am made to say that "fundamentally I believe it (the present housing situation) to be due to transportation and finance," and a little further on, I am quoted as proposing "car priorities for the shipment of materials and pressure exerted on the banks to induce or force them to lend for building purposes." In almost the next sentence, I am made to say that the system of building for profit has failed, which latter proposition is a direct negation of the former.

As a matter of fact, I said none of these things. I referred to priorities in shipments of building materials as one of the many perfectly futile remedies which have been advocated by various committees and commissions. I made it quite clear that I do not favor any attempt to force the banks to loan their depositors' money on housing enterprises, which, unfortunately, are generally of a highly speculative nature.

I do believe that the old machine, which began to creak many years ago, suffered a complete breakdown under the pressure of war time conditions. I believe that ultimately we shall have to devise a new machine through a long, evolutionary, not revolutionary, process, and I expressed the hope that, in the meantime, the old machine may be patched up in order that production may not entirely cease.

The proposition that the old machine has broken down because it was based on the system of *building for profit,* was advanced by the special committee appointed to draft the resolution. I took the floor in strenuous opposition to this theory and stated my belief that it was the *abuse* of the system by the shoe string speculator, rather than any inherent weakness in the system of conducting business for profit, which was in large measure responsible for present conditions. I stated my belief that if the system of building for profit were unsound, the same thing would be true of the mining of coal, the operation of railways and the making of shoes.

The preamble to the resolution, as offered by the committee, was a camouflaged version of the socialists' theory that what they call the "capitalistic" system is the cause of our housing troubles and of all other ills from which the world is suffering. To that theory I do not subscribe.

Architects sometimes bewail the fact that they do not enjoy the confidence of the public to the extent which they consider to be their due. Less hysteria and more horse sense might contribute to that desirable end.

My purpose in writing this letter is, not to engage in a controversy, but to ask you to correct statements wrongly attributed to me.

BURT L. FENNER.

New York.

The American Specification Institute

IN THE AMERICAN ARCHITECT, *issue of Nov. 17, there was printed an editorial outlining the proposed formation of an American Specification Institute. The end it was sought to attain by such an organization appeared so very desirable that the editors of this magazine believed they would be rendering an important service by as far as possible encouraging this effort.*

It is gratifying to learn through a series of letters from readers in every section of the United States, in response to this editorial and inquiries made, that a Specification Institute as proposed would perform a serve of great value to the profession and the public by increasing the efficiency of practically every building operation.

Following are extracts from a few of the many letters received.

* * *

Upon thinking over the subject of discussion in the leading editorial of your issue of November 17, I am impressed that no vocation has greater claims for technical and scientific preparation than that service required in producing architectural specifications. Yet the writing of specifications is generally looked upon as a service of secondary importance and is often performed in a haphazard manner.

This vitally important instrument is prepared in most offices by the inside member of the firm or head of the draughting department by piecemeal, under the stress of directing the draughtsmen, meeting call-

ers, keeping the typist in copy, during the "march to goal"; or, in instances, an old set of specifications, selected to fit the job, is thrown into his handbag by the outside partner and he prepares the "copy" while traveling to an out-of-town engagement.

In the preparation of architectural specifications it is principally the selection of materials and the requirements upon labor that are set forth, and these writings should be done with accuracy, conciseness and simplicity so as to form a bulwark for protection of the owner and so square with the rights of the contractor that no objection could be found by him to binding himself, his heirs, executors and assigns by a contract of which such a document was a part; the general sections, the legal clauses—these, one and all, are factors, often intricate, always vital to the interests of the parties to the contract.

Now to produce such a document, worthy of binding the fortunes of owner, contractor and architect, requires a mind adapted for such intricate research, scientifically trained and judicially poised; equipment for this service should be equal to that of any other profession, and it seems clear, from this reasoning, that "The American Institute of Specifications" has come to birth at the opportune time.

CHARLES EDWARD CHOATE.

Atlanta, Ga.

* * *

We have read with much interest the editorial of November 17, and in which the subject is covered in a comprehensive way, and have also discussed the general plan with our specification writer, who is deeply interested in the project. . . .

We realize the value of comprehensive specifications. Our specification writer devotes his entire attention to that subject, and his work is thorough and has received much favorable mention. . . .

We gather from your paper that you suggest limiting the membership of the Institute to those who employ a special specification writer, hence to the larger operators whose knowledge and experience is well worth while.

This is quite in line with our ideas and we shall be glad indeed to contribute in every way to the success of such a project, while we would not be particularly interested in a project which is purely educational or academic.

We believe that much can be accomplished in this way, taking for example the general conditions of a specification which are most important, we use printed forms which we have compiled largely from those adopted by the American Institute of Architects, in which, however, we have made numerous changes, and still more changes occur to us from time to time.

We believe that a committee of experts could get together and in a short time formulate a "once for all" set of conditions which would be complete and nearly perfect.

These general conditions are necessarily voluminous for the protection of the client, but as we frequently explain, they are intended only for wicked contractors, while those who are upright and who expect to carry out their obligations need not even bother to read them.

My view is that the general conditions should be written not particularly or solely in the interest of the architect or client, the reason being that contractors, like the "poor" are always with us, and to treat them fairly will best serve the interests of future clients.

We think also that specific branches of the work can, in a large measure, be standardized, and that trade names for materials, which convey the idea of specific preferences be, so far as possible, eliminated.

Good specification writers must be men of research. They should know of their own knowledge the things of which they write, and this research can, without a doubt, be very much shortened by the interchange of ideas and experiences which would come about in the natural process of such an institution as you have in mind.

THE WEARY AND ALFORD COMPANY.

Chicago, Ill.

* * *

I have read your editorial of November 17 and am emphatically in favor of any move which will tend to improve the quality and lessen the labor of producing architect's specifications.

I personally find the writing of a specification the most arduous and least grateful of any work in connection with our profession.

Many efforts have been made in the past and suggestions have arrived from many sources looking to the improvement of these conditions. Several chapters of the Institute have appointed specification committees, but so far nothing has "arrived."

If you, through a Specification Institute, or any other method, can supply this much needed help, you will have earned the enduring gratitude of all architects.

THOMAS L. ROSE,
Kirchhoff & Rose.

Milwaukee, Wis.

* * *

It is my opinion that the average specifications now produced is not equal in many ways to the working plans they accompany, and when it is remembered that by the terms of practically every contract in case of dispute the specifications take precedence over the working plans, it will be at once obvious that no architect can be too careful in the preparation of specifications. It is my opinion that

XUM

more disputes arise over the interpretation of specifications than over the reading of plans. I think your plan worthy of the support of the profession.

F. E. Davidson.

Chicago, Ill.

* * *

Generally speaking, I am in entire sympathy with your editorial of November 17 on architects' specifications. Builders, estimators and material men have for years spoken with derision of the majority of such specifications and rightly so. I believe the practice of taking an old specification, crossing out, interlining, and then handing such a mutilated document to a stenographer, with only this much information to write the specification on a new job, is altogether too common.

To suggest a cure for this, applicable to all specifications, is not easy. I believe that the type of the building in hand must dictate the character of specification required, carrying descriptive paragraphs or not, depending upon individual instances. I do not think one form of specification that may be gotten up will be generally applicable. References to checking lists such as the one given in the back of your 1920 Specification Manual, are valuable reminders. I am not prepared to say how the "American Specification Institute" should go about its task. It will be of interest to watch the development of their problem.

Arthur Woltersdorf.

Chicago, Ill.

* * *

In our opinion, the facts generally set up in your editorial of November 17 are undoubtedly true. Specification writing is apt to be the bugbear in the architect's office, and there seems to be a great shortage of men properly trained to do this sort of work.

It is almost impossible for the principal in an office carrying on any volume of business to keep himself in a frame of mind to do this work properly, as it naturally requires concentration, which in turn means that the specification writer should be free from disturbance of any sort.

Every office will, of course, work this problem out in a way best suited to fit the personnel of the organization, but we feel that the specification writing could undoubtedly be very much improved by the assistance that you propose in your editorial.

Mills, Rhines, Bellman & Nordhoff.

Toledo, Ohio.

* * *

I am heartily in favor of the organization of American Architects' Specification Institute. It is true that there is nothing in the architectural profession which is more lacking than a comprehensive specification, which in my opinion is due to the lack of practical experience on the part of an architect, and no doubt a Specification Institute will be a great benefit to the profession and naturally to the client.

Brown & Von Beren,
Per F. Von Beren.

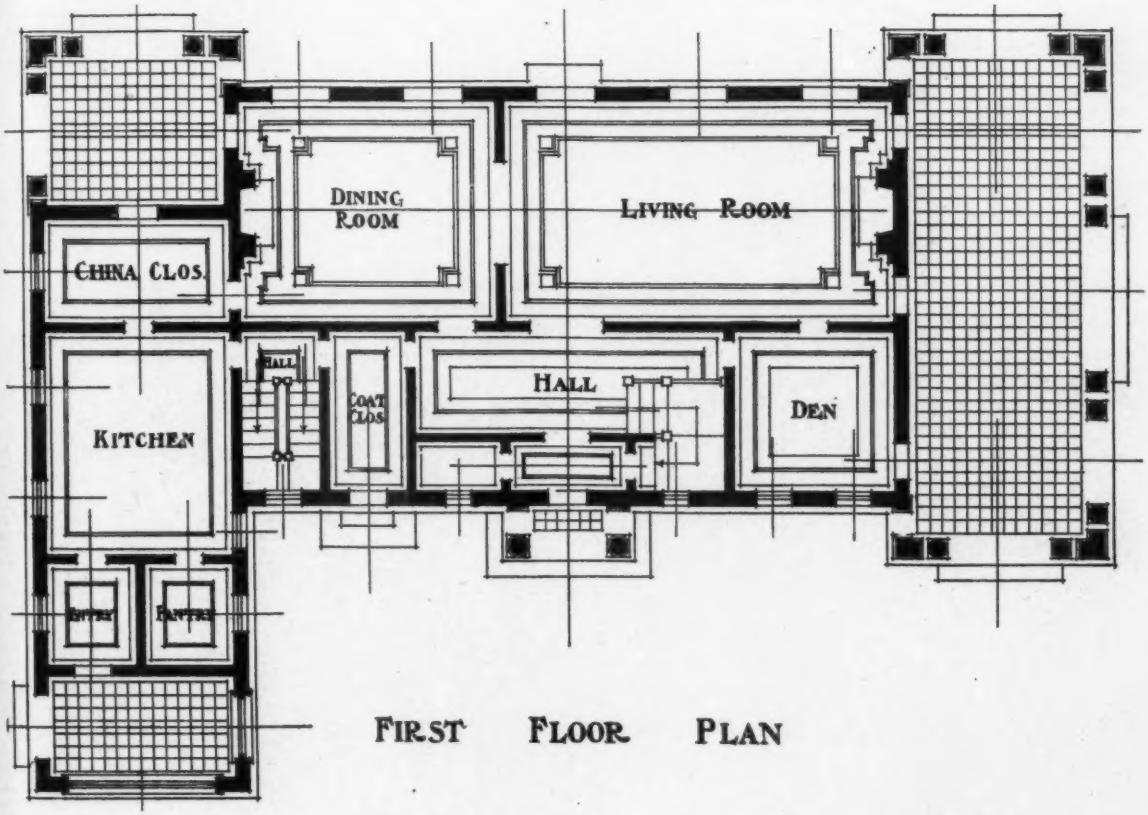
New Haven, Conn.

* * *

Your editorial on the American Specification Institute cannot fail to interest every architect. . . . The specification is so intimate a part of the architect's work that the man who designs, the constructor and the technician must all take their share in it, and the building is the gainer in proportion as the elaboration of the specification is in the hands of men who have most to do wth creating the building, rather than when it is treated as a thing as much apart from a building as some architects are inclined to treat the pure engineering. But a specification manual is something we have all been dreaming about for years but have never had the time nor the courage to undertake. If you, or the Specification Institute can evolve such a thing as that and keep it up to date by some simple process, you will earn the gratitude and thanks of every architect, and thousands of builders who now suffer by imperfect specifications will rise up and call you blessed.

C. H. Blackall.

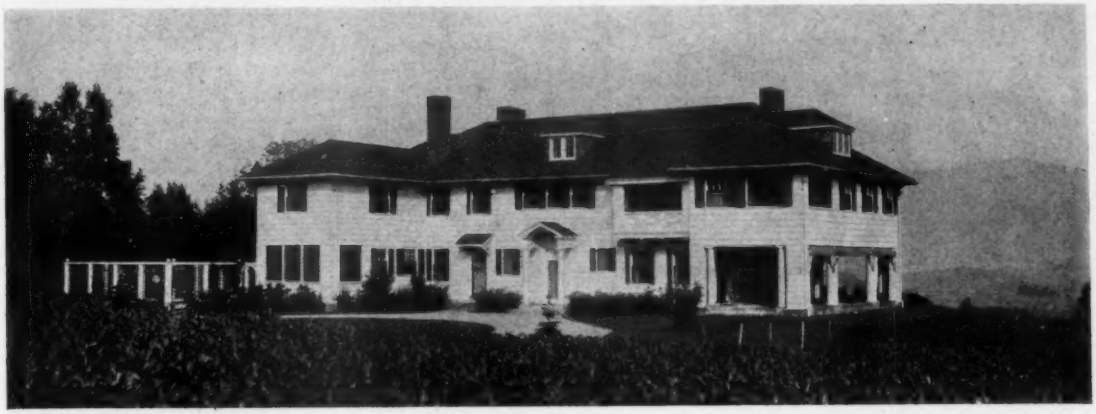
Boston, Mass.

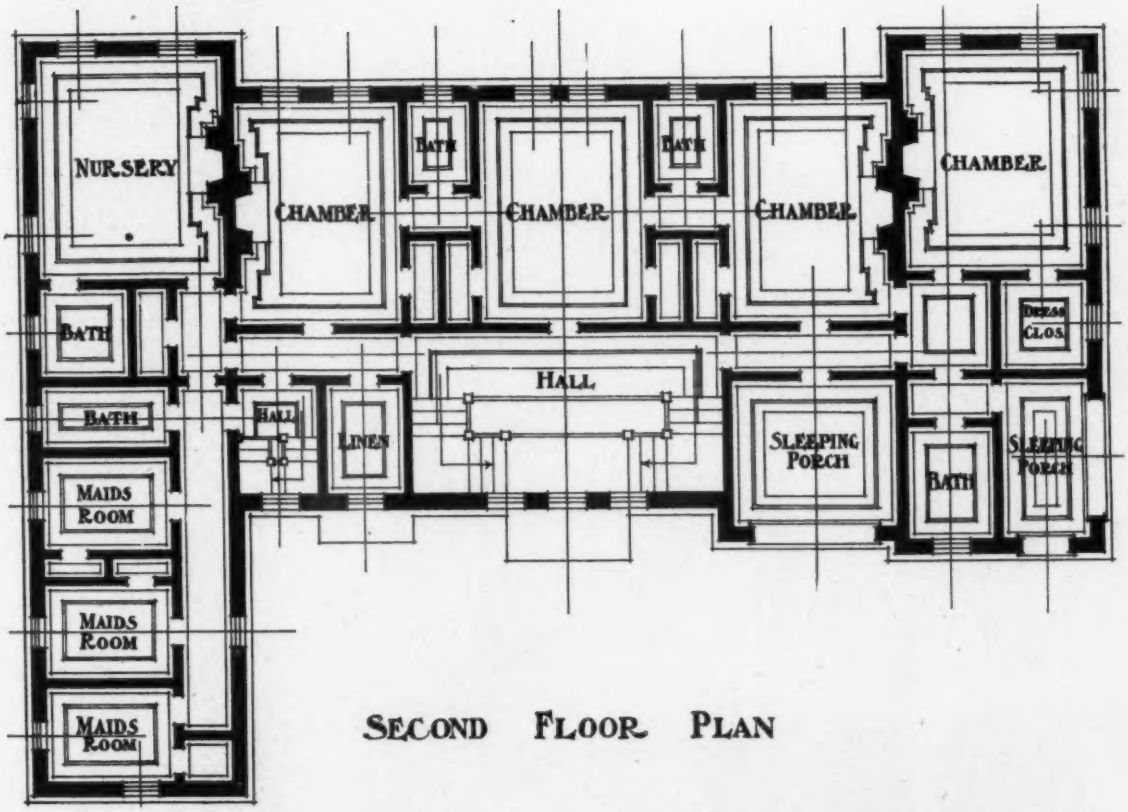


FIRST FLOOR PLAN

HOUSE AT WILLIAMSTOWN, MASS.

JAMES PURDON, *ARCHITECT*

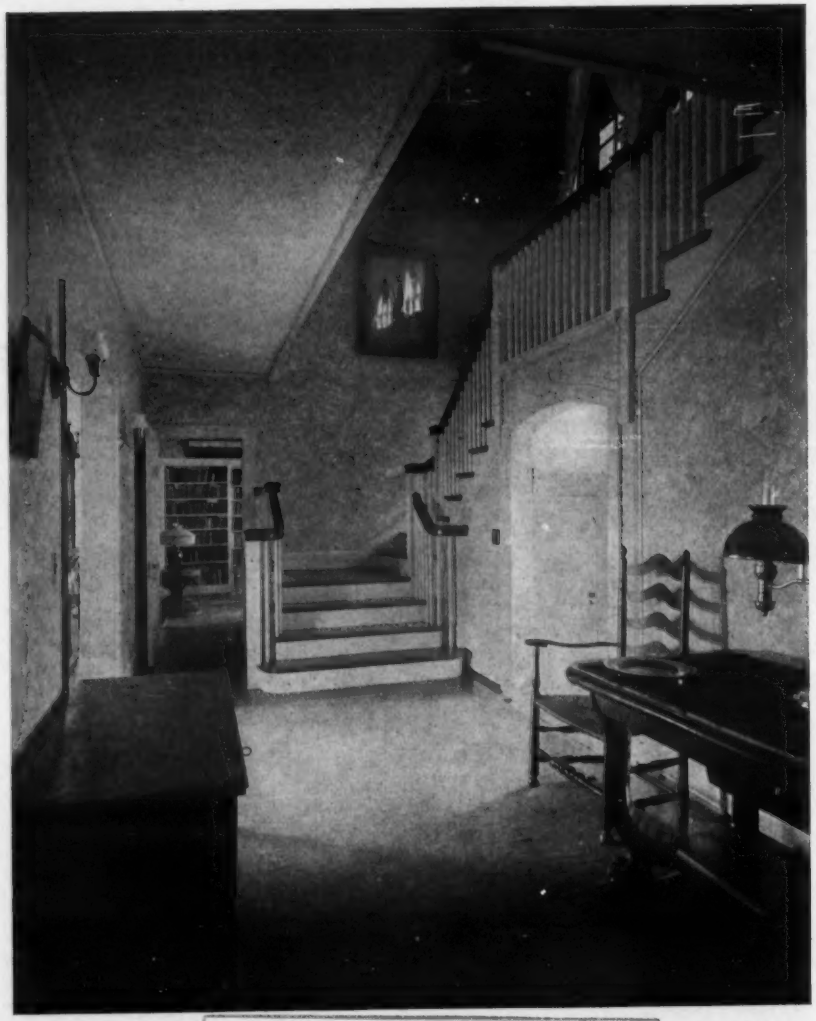




SECOND FLOOR PLAN

HOUSE AT WILLIAMSTOWN, MASS.
JAMES PURDON, *ARCHITECT*

XUM



HOUSE AT WILLIAMSTOWN, MASS.
JAMES PURDON, *ARCHITECT*

LIBRARY
THE DETROIT EDISON CO.
DEC 18 1920

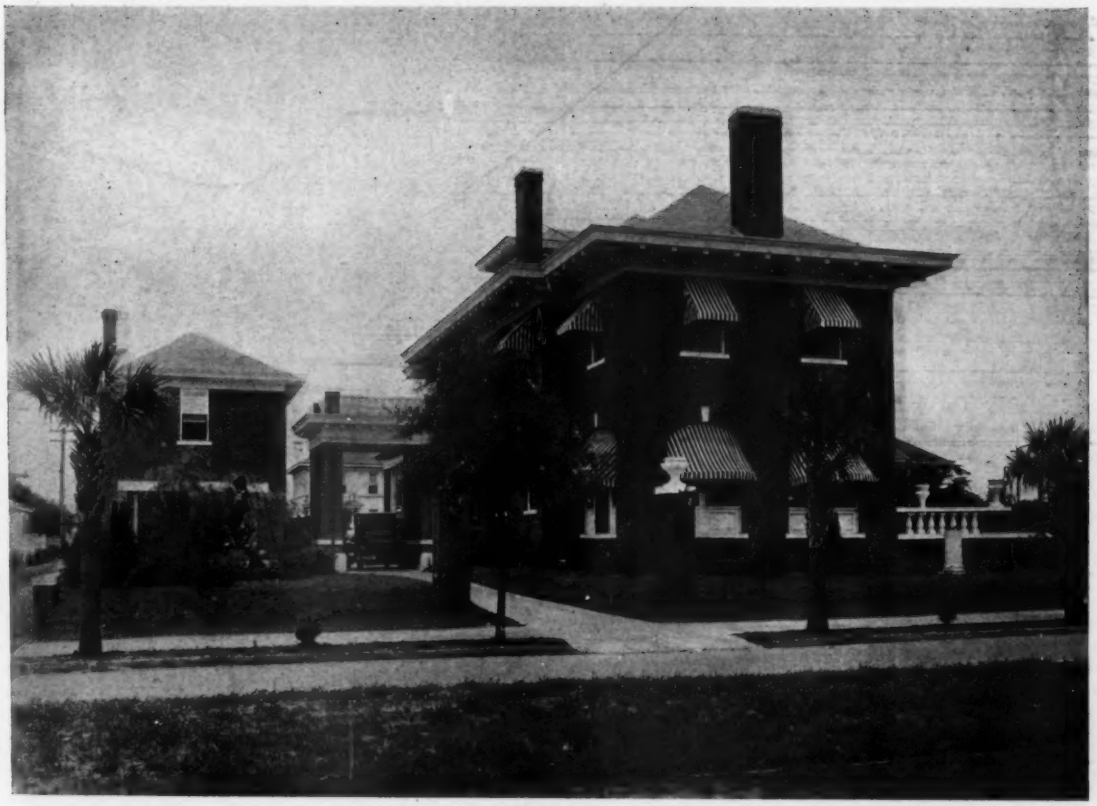
DINING ROOM

LIVING ROOM

HOUSE AT WILLIAMSTOWN, MASS.

JAMES PURDON. *ARCHITECT*

XUM



HOUSE OF G. I. TAGGART, SAVANNAH, GA.
OLAF OTTO, *ARCHITECT*

XUM

XUM

STAIR HALL

LIVING ROOM

HOUSE OF G. I. TAGGART, SAVANNAH, GA.

OLAF OTTO, *ARCHITECT*

XUM

DINING ROOM

SUN ROOM

HOUSE OF G. I. TAGGART, SAVANNAH, GA.

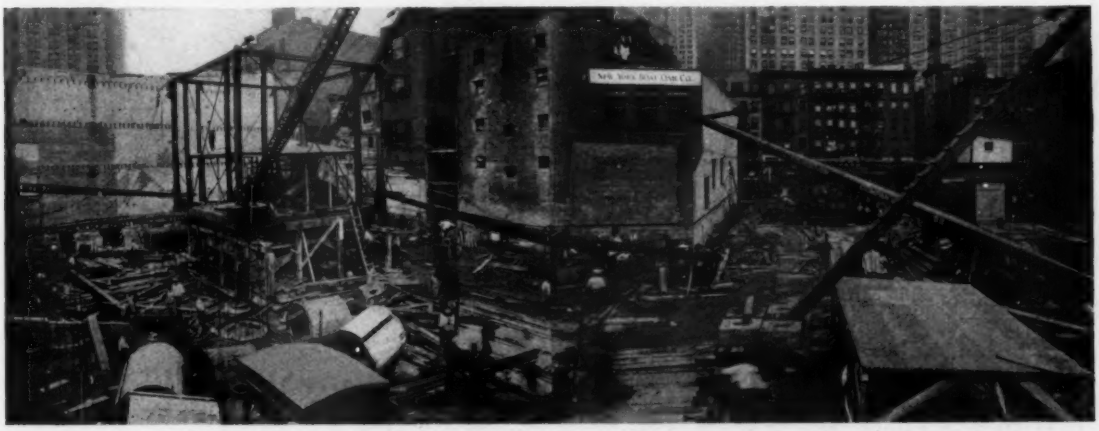
OLAF OTTO. *ARCHITECT*

XUM

Foundations—Their Selection, Design and Construction

Part V—The Pneumatic Caisson Foundation

SELECTION of the pneumatic caisson foundation as the proper one for any building is usually made as a result of the existence of two conditions which, occurring together, render the use of other types of foundations extremely difficult if not impossible. These conditions are (a) extremely heavy loads to be supported and (b) the presence of firm strata such as rock or hardpan only at a considerable depth below the ground water level. Due to the greater cost of construction and the necessity for using the pneumatic caisson foundation only under the existence of conditions unfavorable to other types, the use of such a foundation is somewhat restricted. Within its field, however, it is indispensable and the construction of our skyscrapers in certain sections would be impossible without resort to its use. Briefly stated then, pneumatic caisson foundations should be used for buildings in which it is desired to eliminate all possibility of settlement, no matter how small; where the depth of rock or hardpan at the site of the proposed structure is very considerable, and the character of the overlying strata is such as to render the use of spread footings impossible; where a large quantity of ground water is present and the presence of heavy adjoining buildings requires an absolutely safe and certain method

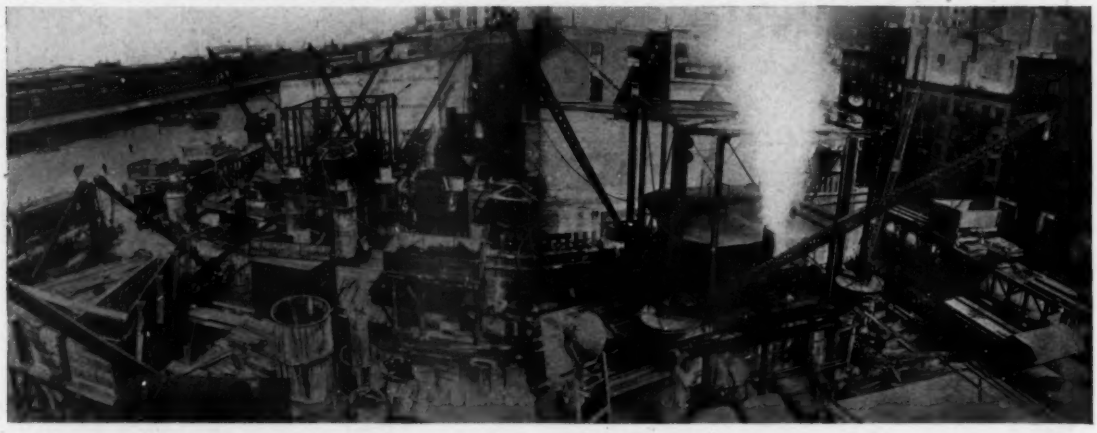


COMMENCEMENT OF FOUNDATION WORK ON THE BARRETT BUILDING, NEW YORK CITY
Note cutting edges with vertical reinforcement (at left) in place for circular caisson construction

of carrying the foundation piers to rock or hardpan.

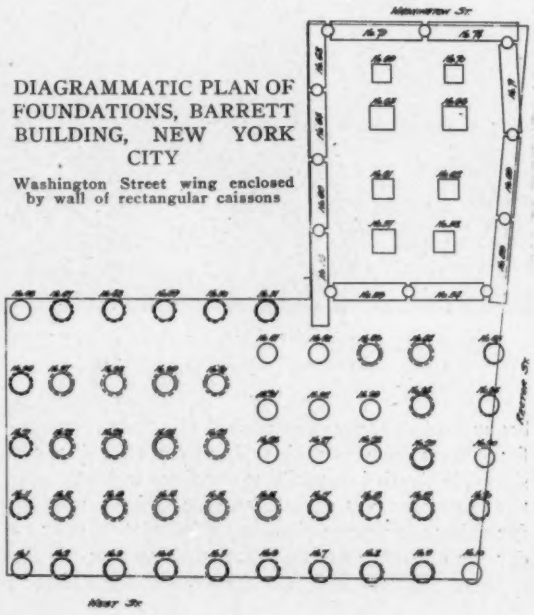
In addition to the foregoing, there are other factos which often make the selection of the pneumatic caisson foundation desirable. With mechanical ventilation and artificial illumination, basements and even sub-basements have been found to possess a value as rentable space, whereas formerly ther use was limited to the heating plant and other mechanical equipment necessary to the proper maintenance of the structure, and for storage purposes. However, if an entire basement can be rented at an attractive figure, it may prove economically advantageous to construct a sub-basement to house the mechanical equipment. The present-day use of the basements of large buildings for restaurants, barber shops, etc., is well known. In the case of large banking institutions a very considerable space below the curb level is necessary for safe deposit vaults, and even where only a small portion of a large building may be occupied by such a banking institution, the need of vault space must be met. Therefore, since in many buildings the construction of three or four stories below the surface of the ground may be necessary, thus requiring retaining walls of enormous strength to resist the exterior pressure which in such cases is liable to develop due to quicksand and water, the desired result may, in such a case, be accomplished by supporting the wall columns on comparatively long and narrow rectangular pneumatic caissons sunk very close together, end to end, and afterwards joined so as to form a continuous wall enclosing the site of the building and carried down through the water-bearing stratum to rock or hardpan.

Such construction was used in the 31-story Bankers Trust Building, New York City, in which there are three stories below the curb level; the 27 story American Telephone & Telegraph Building with four stories below grade; the U. S. Assay Office, recently damaged by the Wall Street explosion (see THE AMERICAN ARCHITECT of October 6, 1920, page 441); the Morgan bank building opposite the Assay office which has three stories below grade; the Seaboard Bank Building (see illustrations) and for a section of the Barrett Building, illustrations of which also accompany this article.



LATER VIEW, BARRETT BUILDING, SHOWING A NUMBER OF CIRCULAR CAISSONS IN PROCESS OF BEING SUNK

In general, where the soil conditions are such as outlined above, the pneumatic caisson method for building foundations is also the most economical method for column loads of about 700 tons or more, and it may be often found advisable to use this



DIAGRAMMATIC PLAN OF FOUNDATIONS, BARRETT BUILDING, NEW YORK CITY

Washington Street wing enclosed by wall of rectangular caissons

method for even smaller loads, when the cost and the importance of the building justify a greater expenditure of money for the foundations in order to insure absolute stability.

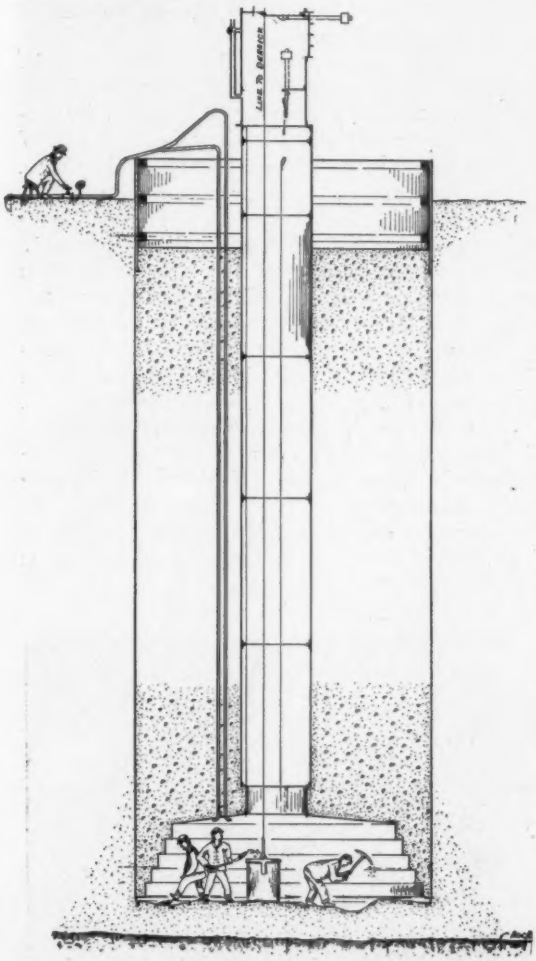


FIG. 1. TYPICAL SECTION SHOWING METHOD OF SINKING A PNEUMATIC CAISSON

The size of the caissons is generally governed by the bearing capacity of the rock or the soil underneath the caissons. The New York building code prescribes the following allowable loads per square foot:

	Tons.
Soft rock	8
Hardpan	10
Medium rock	15
Hard rock	40

Where there is hardpan overlying the rock it is generally sufficient to sink the caisson to such a depth that the cutting edge is carried from one to two feet into the hardpan, and the excavation may then be carried down to rock below the cutting edge if required, as shown in Fig. 1. In this case the excavation area below the cutting edge may be increased, or in other words the caisson may be belled out to a greater bearing area in the hardpan or on the rock. Such construction is illustrated in Fig. 2.

It is in this way often possible to use a smaller caisson than would be necessary if based on the bearing capacity of the soil under the caisson in cases where this is less than the compressive strength of the concrete. The size of the caisson is then determined by the bearing area required under the grillage, allowing about 6 in. outside of this area for possible inaccuracy in sinking.

The weight of the caisson itself, although often considerable, is not included in determining the load on the bottom since the friction between caisson and soil will more than counteract the weight. In fact the caissons will have to be loaded during sinking in order to get them down to the required depth, and in sinking a small caisson the piling of this load often proves quite a problem. It is mainly for this reason that the smallest caisson which it is practical to build is about 6 ft. 6 in. in diameter.

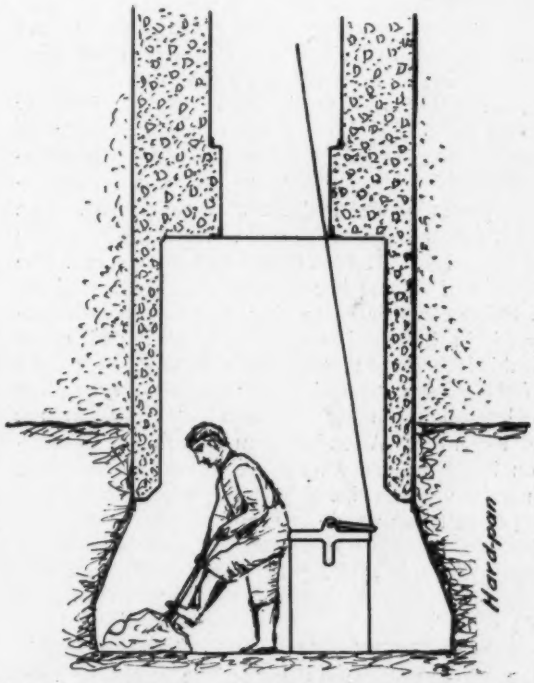
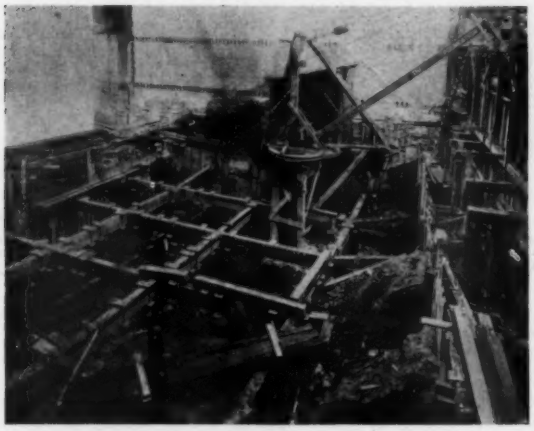


FIG. 2. WORKING CHAMBER OF PNEUMATIC CAISSON, SHOWING METHOD OF BELLING OUT AT BOTTOM AFTER CUTTING EDGE HAS PENETRATED SEVERAL FEET INTO HARDPAN

Caissons are now usually built entirely of reinforced concrete. The outside forms are either removed before sinking or they consist of a 2 in. tongued and grooved planking carried down with the caisson. The shaft-forms, through which the



EARLY STAGES OF FOUNDATION WORK, SEABOARD BANK BUILDING, NEW YORK CITY

excavated material is removed and the men enter and leave the working chamber, are made of steel and are collapsible, so they can be removed after the working chamber is filled with concrete.

In the sinking of a caisson the first step is to lay down the cutting edge. This is usually formed of steel angles and plates. The forms for the working chamber are then constructed, the necessary reinforcement placed and the concrete poured. The shaft forms and exterior forms for the next section of the caisson are then placed and this poured. The process of sinking is commenced by the men in the working chamber excavating the material uniformly within the area included by the cutting edge, and as this is removed through the inner shaft, the weight of the caisson causes it to sink. As the excavation and resultant sinking progresses, extra sections are added on top. When but a small section of the caisson has been poured, the weight not being great, must be very considerably supplemented by the piling of cast iron weights on top in order to overcome the skin friction between caisson and surrounding earth. As soon as the ground water level is encountered, further work must proceed under compressed air.

A type of air lock for work of this nature is shown in one of the drawings. The successive steps in passing through are illustrated. The air pressure increases with the depth below water level, usually being in the neighborhood of one pound (per square inch) for each two feet of depth. Since it is not possible for men to work under a higher pressure than 48 pounds, the depth to which a caisson may be sunk below the water level is limited to about 100 feet. At this pressure the men can only work for periods of 15 minutes consecutively, which, of course, makes such construction, when carried close to the limit of depth, quite expensive.

A record for rapid caisson sinking was made by the Foundation Company in 1906, when 87 caissons for the U. S. Realty Building and the Trinity Annex were sunk and sealed in sixty days, the last 57 caissons being sunk and sealed in only thirty days. These caissons extend to an average depth of 75 ft. below curb level.

Accompanying this article several photographs and a foundation plan of the Barrett Building, West and Rector streets, New York City, are presented.

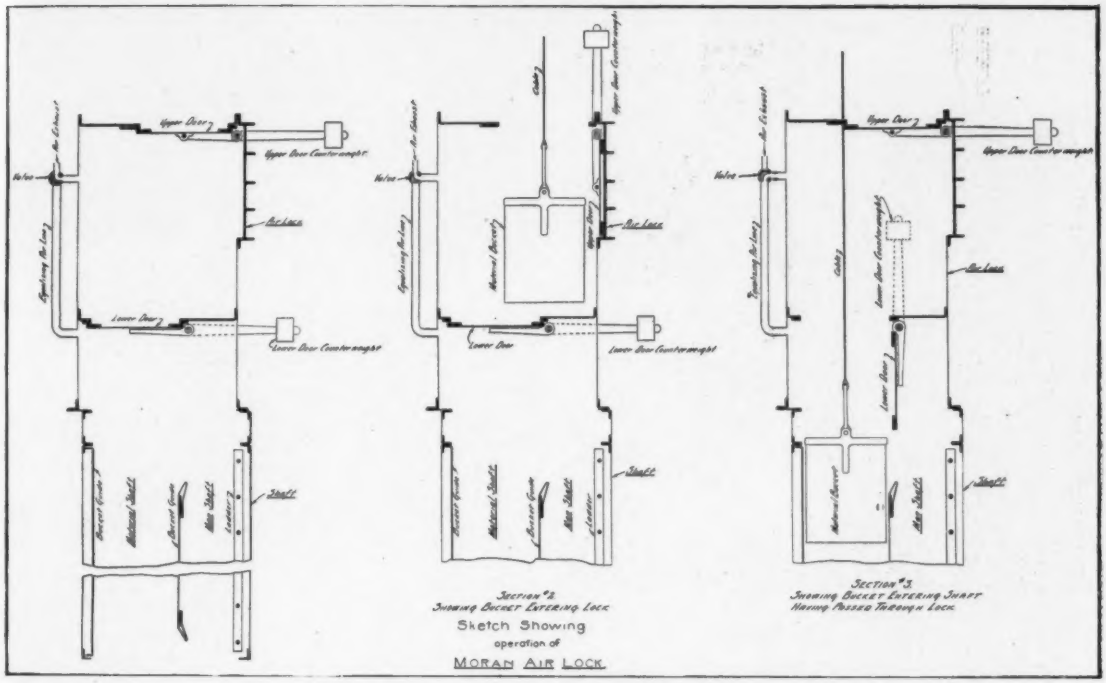
This building is located on the old waterfront, North River, where the ground is filled in and a mass of old piles and timber cribs is buried to a depth, in some cases, of as much as 30 feet below street level.

The nature of the ground, more than the weight of the building, was in this case the governing factor in deciding on the type of foundation, and pneumatic caissons were selected as being the most suitable way of carrying the foundations through the buried timber construction to a safe bearing on good bottom.

LATER VIEW, SEABOARD BANK BUILDING, ILLUSTRATING METHOD OF SINKING SERIES OF RECTANGULAR CAISSONS TO FORM ENCLOSING WALL

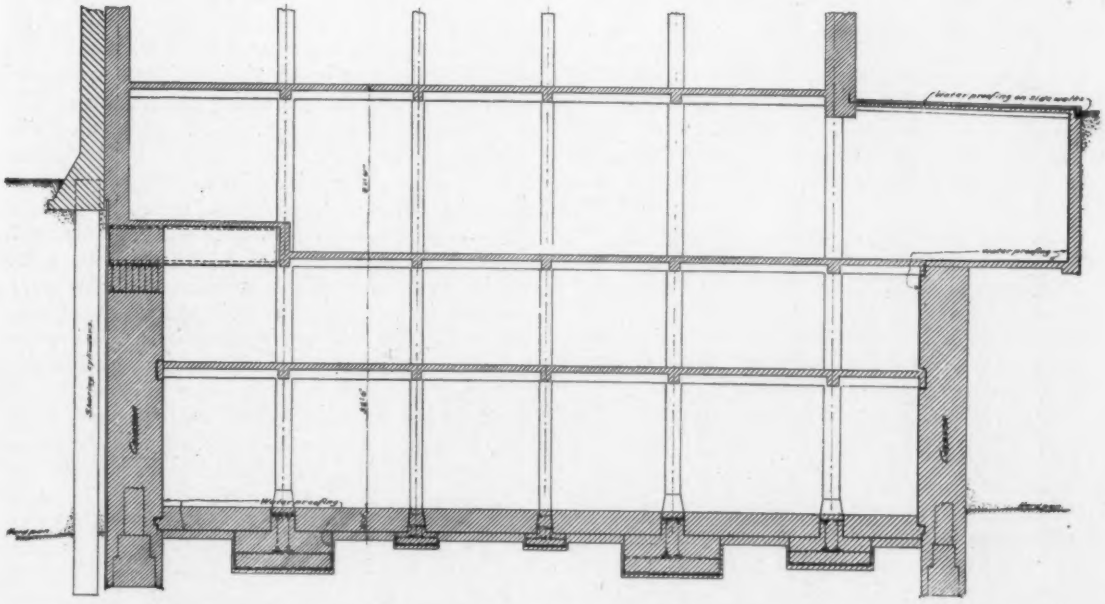
After caissons are sunk and sealed, entire interior is excavated to the desired level

Under the West and Rector street wing, 51 circular caissons were sunk to hardpan at an average depth of about 40 feet below street level, with some of the caissons belled out in hardpan to get sufficient area to carry the column load at 10 tons per square foot.

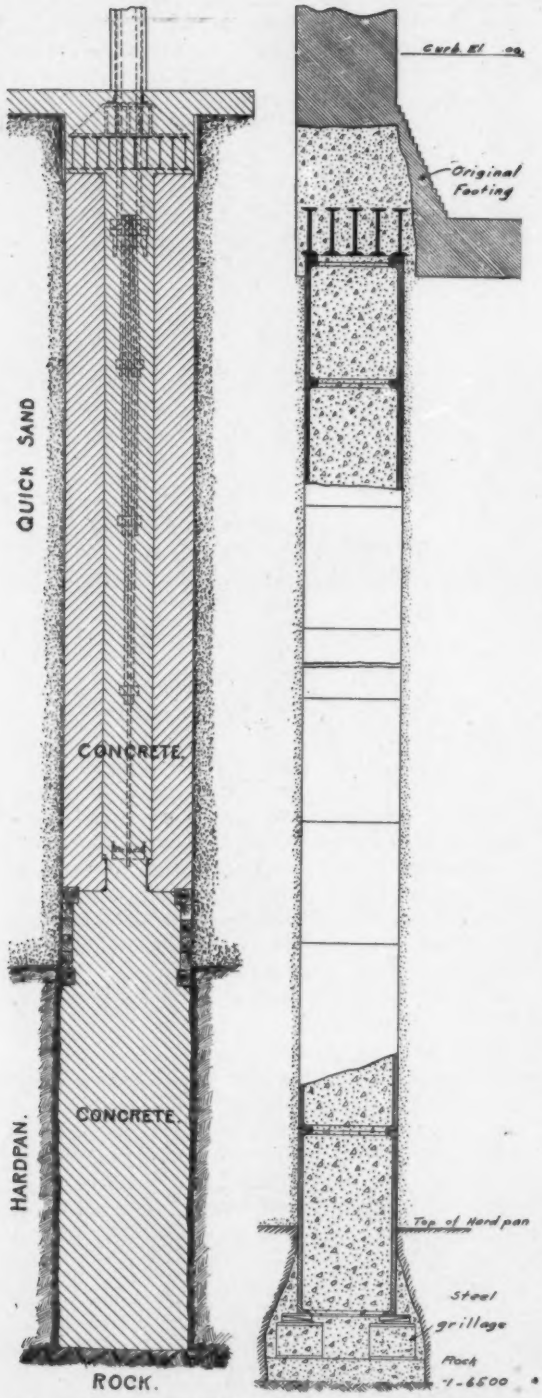


A TYPE OF AIR LOCK USED IN PNEUMATIC CAISSON WORK

At left: Lock closed. At center: Lock open to outside, bucket entering. At right: Lock open to inside, bucket descending to working chamber



TYPICAL CROSS SECTION THROUGH SUB-GRADE STORIES OF A BUILDING, ILLUSTRATING USE OF CONTINUOUS RECTANGULAR CAISSONS JOINED TO FORM ENCLOSING WALL



AT LEFT: METHOD USED IN ANCHORING COLUMNS TO CAISSONS, SINGER BLDG., N. Y. CITY

At right: Caisson construction used in underpinning foundations of an existing building

Under the Washington street wing, eleven pneumatic caissons were sunk. These caissons are long and narrow, joined together by the pneumatic process to form a continuous watertight cofferdam around this part of the lot, which is simplifying the excavation for the interior piers and the deep cellar required under this part of the building. The eight piers inside of this caisson cofferdam are sunk in the open in the ordinary way by using timber sheeting and bracing.

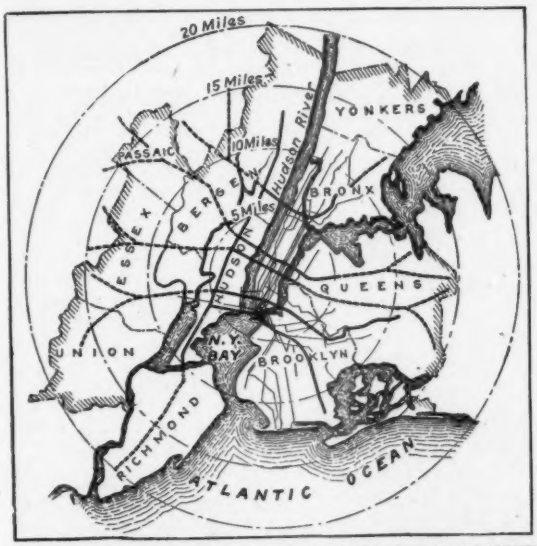
Engineers Discuss Transit Development

URBAN and Suburban Transportation for the Metropolitan District of New York formed the subject of a paper by Henry M. Brinckerhoff, associate of William Barclay Parsons, widely known for his connection with the construction of New York subways, presented at a meeting of the New York section, American Society of Civil Engineers, held November 17. This meeting was the second of a series of monthly gatherings arranged by William J. Wilgus, president of the New York section, to discuss New York City transportation and co-related problems.

The subject was treated in a most comprehensive manner by Mr. Brinckerhoff, and his talk was fully illustrated by charts showing the growth of population within the Metropolitan district during the past one hundred years, as well as the present means of transportation and the number of persons carried daily thereby. The Metropolitan district was taken as that territory included within a 20-mile radius of the Forty-second Street district of Manhattan. The Metropolitan area of New York for traction discussion may be taken as that outlined by the United States Census Bureau, inclusive of Paterson, Newark and Elizabeth on the west, Flushing and Far Rockaway on the east, and from Staten Island on the south to and including Yonkers and New Rochelle on the north. More subways, of course, are inevitable but, it was stated, these should be built as long-haul trunks and fed by the surface lines and buses. Thirty-five per cent. of the passengers in the Metropolitan district use surface electric cars today because they are the most convenient. A study of the needs of the Metropolitan district as a whole suggests the necessity for a combined system cheap enough in its outlying sections to permit of wide distribution of travel. Into lower Manhattan, i. e., below Fifty-ninth Street, or an area of ten square miles, there are daily poured over 2,000,000 people. This means almost doubling the population of the island. Judging from the fact that the resident population, as shown by the recent census, has dcreased about 50,000 in the last decade,

the influx of daily non-residents is forcing the residents off the island.

The co-relation between transit development and growth of population in suburban districts was well illustrated by the charts. The difficulty of providing a well balanced system under present conditions was pointed out. Due to a large portion of the New York Metropolitan district lying within the state of New Jersey, no well co-ordinated scheme had so far been feasible. The real backbone of the transit system consisted of the elevated and subway lines, all terminating within the Greater New York City limits. The railroads take care of but a small proportion of the traffic and while the Hudson Tubes carry a considerable number of persons to and from New Jersey, this is slight when compared with the New York City subway traffic. The present New York City transportation system, supplemented by the additional lines now planned by the Public Service Commission will tend to develop further the territory east of the Hudson River, while wholly neglecting that large area on the Jersey side. Naturally it could not be expected that any system developed and financed by the City of New York would be planned to promote the growth of territory outside the city limits. This one-sided development was shown to have additional disadvantages, since practically all supplies necessary to feed, clothe and house the population on the easterly side of the Hudson River, came from the west, and had not only to be carried across the Hudson River, but also across lower Manhattan's congested streets and the East River, thus materially increasing the cost to the consumer. Such transportation already forms a serious problem and by further adding to the population east of the Hudson, freight traffic conditions will become very serious indeed.



SUGGESTED PLAN FOR DEVELOPING TRANSIT LINES IN METROPOLITAN DISTRICT

The solution proposed by Mr. Brinckerhoff would require the elimination of state lines, the constitution of the Metropolitan district into a separate political entity—a "forty-ninth state"—and a comprehensive plan providing lines of transportation to develop that territory on the westerly side of the Hudson River. The subway lines would take care of the long-haul traffic, and these in turn would be fed by the surface lines and buses. This would seem to be an ideal solution, but the changes necessary are so radical that it does not present itself for immediate relief.

Other speakers were D. L. Turner, Chief Engineer, Transit Commission; Frank Hedley, President and General Manager, Interboro Rapid Transit Company; P. H. Woodward, General Passenger Agent, Long Island Railroad; Delos F. Wilcox, Public Utilities Expert; George McAneny, formerly President of the Board of Aldermen, New York City; J. V. Davies, of Jacobs and Davies, Consulting Engineers; and Frank J. Sprague, Past-President, American Institute of Electrical Engineers.

Mr. Hedley, in discussing the paper, said in part: "Mr. Brinckerhoff has developed a very comprehensive and ambitious plan to furnish rapid transit facilities for people in the immediately surrounding districts of Manhattan Island. He suggests that we free our minds of our habitual ideas of New York as being Manhattan. That is easy enough for the purpose of Mr. Brinckerhoff's report, but it is extremely difficult to carry out in practice. Mr. Brinckerhoff's report is a study of what would be a good transportation system for the people in the vicinity of New York without reference to State lines or other physical barriers."

Mr. Woodward said the question of extending subway lines into Jersey was debatable and that many years would pass before such a plan was actually put into operation.

George McAneny asserted that a joint commission from New York and New Jersey should be appointed to study the development plan outlined by Mr. Brinck erhoff.

Engineering Data on Artificial Illumination

A SECOND set of Lighting Data Bulletins has just been issued by the Edison Lamp Works of the General Electric Company. This set consists of 9 bulletins as follows: The Lighting of Armories and Gymnasiums; The Edison Mazda Lamp for Stereop-

ticon Service; Calculation of the Lighting Installation; The Incandescent Lamp—Its History; The Manufacture of the Edison Mazda Lamp; The Lighting of Coal Mines; Medical Lighting, Including Hospitals and Dental Offices; Commercial Photometry; and The Lighting of Shoe Factories.

It is stated that additional numbers will be issued from time to time as the material is compiled.

According to the Department of Publicity of the Edison Lamp Works, a rather comprehensive program in the way of supplying engineering information on illumination has been launched by that company. Each bulletin is given an "L. D" number arranged consecutively. This indicates the order of appearance. An index number also appears, provided for ease in filing and maintaining related subjects in proximity. In brief the scheme of indexing is as follows:

The entire program is divided into five sections: Index numbers from 1 to 10 cover bulletins relating specifically to the lamps themselves. Index numbers from 11 to 30, cover general illumination questions. Index numbers from 31 to 60, cover interior, commercial and decorative lighting. Index numbers from 61 to 90, cover industrial lighting. Index numbers from 91 to 100, cover exterior and miscellaneous lighting.

As it is impossible to issue all numbers of a section simultaneously or in consecutive order, subjects which are most timely and regarding which the data is most readily available, are taken up in turn. It is anticipated that this series, when completed, will comprise a most comprehensive treatment of lighting practice. By this means of disseminating information in sections, it is possible readily to revise material which has become antedated and keep the series thoroughly up to the minute.

A container or desk file neatly finished in cloth of strong construction which is extremely handy, is available. This will be sent free of charge to anyone requesting it. For copies of these bulletins and container address Department of Publicity, Edison Lamp Works, Harrison, N. J.

Book Notes

ENGINEERING AND BUILDING FOUNDATIONS, Volume I. Ordinary Foundations, 4th Edition. Revised and Enlarged. By Charles Evan Fowler. Cloth, 6x9, 531 pp. Illustrated. John Wiley & Sons, Inc., Publishers.

In the preparation of a fourth edition of the author's treatise on Sub-Aqueous Foundations, it appeared desirable to expand the work into three volumes, of which that bearing the above title forms the first. Due to the addition of much co-related and new material, including extensive data on building foundations, the title has been changed to "Engineering and Building Foundations," so as better to indicate the comprehensive scope of the data contained.

Volume I treats of the design and construction of crib cofferdams, pile driving, sheet piles, pile foundations, pier location and design, retaining walls and culverts. The author here sets forth information gained from actual experience with the class of work described. Valuable data is included on the type of machinery and contractor's plant required in the construction of piers and foundations. The various external forces acting on bridge piers are fully discussed in the chapters treating this phase, and methods of proper design of such piers given. The data on the bearing capacity of foundation beds is extensive and a valuable addition. The majority of the data in Volume I deals with bridges, it being stated in the preface that the methods used for building foundations have been covered in Volume II.

Railroad Snowsheds to Be Used As Motor Path

Ingenious plans whereby a smooth concrete auto road may be run for 33 miles through a difficult pass of the Sierra Nevada Mountains, and a great transcontinental railroad may acquire, at the same time, a system of permanent concrete snowsheds, have been completed by a western engineer. The design for the new snowsheds provides them with a continuous flat, walled roof, on which autos could run with the assurance that they would encounter no heavy grades or dangerous curves.

At the point under consideration, the track is paralleled, at an elevation of 5,000 to 7,000 ft., by the Lincoln Highway, which is blocked by deep snows for five months of the year. By transferring this link in the thoroughfare to the snowshed roofs, a little clearing work would enable autos to run practically all winter. Excessive first cost heretofore has prevented the construction of concrete snowsheds at this point, in spite of the large depreciation and fire loss on the present wooden structures. But with Federal and state aid on the highway part of the project, the burden of the railroad would be greatly reduced, and early construction encouraged. A large saving in maintenance costs would result for both.

Current News

Happenings and Comments in the Field of Architecture and the Allied Arts

Burt L. Fenner, President of the New York Chapter, American Institute of Architects, Called As a Witness in Lockwood Investigation

Resurrecting the contention advanced during a session of a Congressional committee in Washington seven years ago, that the American Institute of Architects is practically a trust, Samuel Untermyer, counsel for the Lockwood Commission, investigating housing conditions in New York, called Burt L. Fenner, president of the New York Chapter of the Institute to the witness stand on December 9th. Mr. Untermyer's attitude toward the witness and the comment in the daily papers on the testimony of Mr. Fenner, prove a deplorable lack of knowledge as to just what the Institute is and just what it stands for. The fault lies principally with the Institute itself. It has had ample time since the first imputation that the Institute was a combination of architectural practice, to clear itself and to educate the public as to the actual facts.

Mr. Untermyer's contention that the Institute is an architectural trust is based on various erroneous assumptions. First that it includes in its membership a majority of practicing architects, second—that its suggestions or advice is mandatory.

Mr. Fenner's testimony as reported in part in the New York daily press, is as follows:

Samuel Untermyer, counsel to the committee, undertook to show how the institute works to the detriment of building. He placed on the stand Burt L. Fenner, a member of the firm of McKim, Mead & White and President of the New York Chapter of the Institute. This chapter, Mr. Fenner said, comprises about 250 architects, and includes the most prominent members of the profession in the city.

It developed immediately that the institute issues a document which it calls the "Professional Practice of Architects," and which deals with the fees to be charged by all members.

SIX PER CENT. CHARGE IN THE CITY

"What is the per cent. charged for reconstruction in the City of New York?" asked Mr. Untermyer.

"Generally speaking, it is 6 per cent.," replied the witness.

"And in country work?"

"That varies all the way from 5 to 15 per cent., but these rates are not mandatory."

"We'll see about that," observed the counsel. "Let me read you something from this Professional Practice of Architects, or code of ethics. It says, 'The architect's professional services consist of necessary conferences, preparation of preliminary studies, &c., for which, except as herein mentioned, the minimum charge, based on the total cost of work completed, is 6 per cent.' That is pretty definite, isn't it?"

"Yes," agreed Mr. Fenner. "It is what the architect believes he should receive for his services."

"And this is supplied to the members of the forty chapters throughout the country?"

"Yes."

"It also says here that it is proper to make a charge higher than 6 per cent?"

"Yes. It is necessary in order to keep out of the poorhouse."

"I don't think we will discuss the poorhouse. Now, it says that an architect is entitled to compensation for articles purchased under his direction, even though not designed by him. Is that another of the rules of the code of ethics?"

"No, I have the canons of the ethics here in a separate document."

COST INCREASED 200 PER CENT.

Mr. Untermyer read other rules and showed that the last revision had been made in 1908 when the cost of construction was much less than at present. In fact, the witness himself agreed that the increase had been all of 200 per cent.

"But the fees of architects remain the same, do they not?" asked the counsel. "That is, you have not decreased your per cent. in fees?"

"That is correct," was the response.

"But you get more money as you are paid according to the cost of the work?"

"The amount of the fee has increased in proportion."

The witness said he thought this fair, as architects' expenses have gone up with other things and building takes longer than formerly. He thought the 6 per cent. rate fair also, and he insisted that many firms cut under the percentage established as proper.

"But what chance has a young man got in your profession as against the great established firms like your own?" Mr. Untermyer asked.

"The young man, in very many cases," responded Mr. Fenner, "is paying no attention whatever to the rate which the institute feels is a fair rate."

"Don't you know as a matter of fact that architects of the city do not consider it professional for men to do work below this rate?"

"I know the opposite is true."

"I have discussed it with a great many men and I know that it is given as the reason for not reducing the rate. They say it is an unprofessional thing and it brings upon them the contempt and disfavor of their more important brethren. You yourself have said that the 6 per cent. rule is generally observed."

"I have said that this is the rate most architects charge."

Mr. Untermyer tried to get the witness to say he would aid in abrogating the rule, but he would not. He insisted it was best for the profession and that young men got along well enough under it.

XUM

Oak Lasts for Centuries

Men employed in driving a new gallery in a gold mine at Charlotte Planes, in Victoria, Australia, have made a discovery. At a depth of 300 feet below ground they have come upon pieces of timber, perfectly preserved, which have every appearance of having been sawn and shaped by the hand of man.

This timber lies in the bed of an ancient river now being worked for gold, and the timber is oak. Oak has the peculiar property of lasting for centuries when buried in water or wet sand. Oak piles have been taken out from under old wooden bridges constructed by the Romans and found as sound as when they were put there nearly 2,000 years ago.

Oak, known as bog oak, is found buried in peat bogs, and is perfectly black, intensely hard and very valuable. At present there is an absolute famine in seasoned oak wood, but if Russia could be opened up to trade that famine would soon be ended. Just before the war it was discovered that the bed of the River Moksha, for a length of over 400 miles, is full of magnificent old oak trees bedded in sand.

Small deposits are found in England. There is a pool in the River Dart, known from time immemorial as Oak Pool, in the bottom of which are masses of fine old oak. The strange thing is that there are no oak trees near the spot at present.

Wet and Dry Sand for Concrete

Wet Aggregates Require More Cement Per Cubic Yard of Concrete

During the past month several series of tests of concretes made from Potomac River sand and gravel have been carried out, using various proportions of cement to aggregate from 1 :1½ :3 to 1 :3 :6 and with the extremes of flowability used in practical concrete construction work, according to an article in *The Scientific Monthly*. The results of these tests emphasize a feature of considerable importance to the contractor. When aggregates are proportioned by volume measure, as is customary on most constructional work, it is found that the use of wet aggregates requires from ½ to 1 bag more cement per cubic yard of concrete than do dry aggregates. Sand is generally wet or at least moist when used, so that the full difference may never be apparent in field practice, yet the use of sand from a pile which has just been exposed to rain will result in the employment of more cement for a given volume of concrete than would have been the case had the work been done on a dry day. The excess strength resulting from the increase in cement is unnecessary, providing that designed strengths were obtained with the drier materials. As above mentioned, this increased quantity of cement may be as high as one bag per cubic yard of concrete, and the increase in strength, due to the added cement in a cubic yard of concrete made with wet aggregates is roughly proportional to the increase in cement. Therefore, if there is a marked increase at any time in the moisture carried by the sand, the tendency on the job should be to use larger volumes of sand in the batch.

Marked improvement in the working qualities of the concrete will be noted under usual conditions when the relative volume of sand is increased and the gravel proportionately reduced. With well graded river sand and gravel, such as is available in the District of Columbia, the "oversanding" may be beneficial up to the point where the volume of sand in the batch is equal to the volume of the gravel. Such concrete will not segregate for maximum flowability commonly used in construction work; it will be easier working, the quantity of cement required per cubic yard will be slightly less and there will be no reduction in compressive strength.

News from Various Sources

It is announced from Geneva, Switzerland, that reports received from Freidrichshafen, Wurttemberg, state that negotiations between a newly organized American syndicate and a company composed of former Zeppelin officials have almost been completed for a transatlantic airship service and a trans-American service.

* * *

New York Times states that plans of Radio Corporation of America, which controls and operates the only high-power radio stations in United States other than those owned by Navy, for putting this country ahead of other nations, if possible, in international radio communication, include project of making New York City pivotal center of American radio communication with Europe, South America and other parts of the world, through establishment within next 8 months of most powerful radio sending station in either hemisphere.

* * *

The Cleveland School of Art, under Director Henry Turner Bailey, is paying special attention to the training of artists for the industries. Departments are maintained for architectural, printing and ceramic art and decorative and illustrative design.

Weekly Review of the Construction Field

With Reports of Special Correspondents in Regional Centers

PESSIMISM is dying.

Those who orated faultlessly concerning the impossibility of any return to pre-war levels find themselves in a peculiar predicament. Their theories seemed sound enough the day after the armistice. We had been engaged in a gigantic war; the world had been practically depleted of almost every commodity; production of necessary articles for peace was years behind schedule. Or so it seemed.

It will take years to reach a pre-war level, the pessimists told us. They pointed to certain fixed facts, which seemed true enough. We were short several million brick, for example. There was no theory about that. We were short the bricks, and any possible production which could be safely guessed at failed utterly to give hope for the future.

Yet we find, despite the facts that there already is a great movement toward the pre-war level. It is much more than a movement. Prices actually are coming down in a vast number of commodities. It is useless to list them here. Mention of textiles, food products, certain sorts of steel, hardware generally, and the interest rate on call money will suffice to call the condition to mind.

What is the reason for it all?

This journal would not attempt to definitely answer a question as complex and far-reaching as that one. No one can properly answer it. But a few salient factors can be indicated, and the rest, as Henry James so often remarked, is "merely a matter of the reader's perspicacity."

Consider labor. During the war period, and immediately following it, labor assumed a nonchalant pose toward everything in general. Some five million men were taken into the service, and five million vacancies were thereby created. There resulted what is familiar to all of us. A high premium was put on the services of the individual worker, and he found himself master of the situation.

Now, this journal is of the opinion that no worker will produce at his maximum under such conditions, patriotism to the contrary. That is not saying that patriotism did not exist in the ranks of labor, but it is saying that when a man *knows* he is an absolutely indispensable cog in some machine, he is very likely to function just about as suits his will. That is true of almost any man, laborer or not, and it was true of the vast majority of the rank and file of labor when the armistice was signed.

Men do not change their attitudes or viewpoints in a day. Labor was no exception to the rule. Having been masters of the situation for nearly two years, it was a sheer impossibility for them to realize the changed conditions in a day or a week or a month. That realization developed slowly, and as the actual result of physical facts, such as the appalling lack of houses, the inefficiency of our transportation systems, and the pitiful underproduction of the necessities of life.

But when those facts finally began to make themselves felt, labor, organized and unorganized, realized that it was being affected by them as well as that mystical "public" to which reference is too often made. Labor looked about for a solution to the dilemma. We were short of building materials, and so we could not build homes. The problem was to get more production out of the existing factories. There could not be an appreciable increase in the number of factories, but there could be, most certainly, a decided improvement in individual production.

There was the solution. Increased efficiency, which meant, after all, an honest effort on the part of the individual to produce a day's work for a day's pay. It matters not at all whether that honest effort was prompted directly by labor itself or by the "produce or get out" slogan of some industries. The fact remains that labor realized the need for increased production, and produced accordingly. This is shown in October's Portland cement record, one of the very largest in our whole history. It is also strikingly illustrated in the bettered transportation facilities, where labor's increased efficiency has speeded up car movement beyond belief and has actually given to the shippers of the country the equivalent of 500,000 cars.

SO much for one of the salient facts. Another has to do with the political situation. Not political as regards the change of party or of victory for another political faction, but political as regards the settling down of every-day business throughout to the daily routine, without consideration of eventualities. There is little if any quibbling as to policies or cabinet possibilities. A great election has passed, and in its wake has come, as Charles H. Sabin, president of the Guaranty Trust Company has remarked, an assurance "of four years of sane administration of public affairs." Whether the implied criticism of the past administration is correct or not is a matter of small moment. The nation generally is looking forward to improved conditions as a result of the election, and confidence breeds results.

Still another factor is the Lockwood Committee's investigation in New York City. This is a local mat-

XUM

ter, to be sure, but a great deal of control is exerted by the various systems which have been shown to be very important factors in the retardance of building in New York and surrounding territory. Since a great share of the necessary homes must go up in the East, and particularly in New York, the committee's revelations have naturally tended to stabilize conditions and to create confidence in the future of the industry. This may be looked upon as academic or purely theoretical, but it must be remembered that confidence in the soundness of any industry and faith in the economic future of it are both necessary to the continuance or development of that industry.

Such are a few of the numerous factors which the pessimists did not take into consideration. In the matter of labor it was a mistake not to take it into consideration as a very important factor. The political situation should have been considered. The Lockwood Committee could not have been foreseen.

The situation today has been bettered sufficiently to invite prophecy despite its dangers. This journal predicts now that the spring of 1921 will witness the advent of a building activity never before paralleled in the history of the country. It makes such a prediction with the full realization that it would be very unfair to architects or other professional men unless it were based upon a sincere belief in its soundness.

It is also tempted to remark upon the recently sustained rent laws of New York, which were declared constitutional by the Supreme Court of New York, and to venture a hint of prediction regarding the effect of that decision. Mr. Lawrence B. Elliman, president of Pease & Elliman, remarked in a recent interview printed in these columns: "What is to prevent other states from passing similar laws, in the case of the New York law being declared constitutional? And what is to prevent the New York legislature from fixing the prices at which houses may sell?"

Public opinion and common sense on the part of even the New York legislature will prevent such action. The rent laws for New York were passed primarily as an emergency measure (some persons hint at politics) and would not have been seriously considered except for that emergency. Other states, it is fairly certain, will not attempt either rent-fixing or price-fixing laws in relation to real estate, because such a measure is necessarily unsound economically and would work to a disadvantage in any community where an imperative emergency did not exist. And this journal again ventures to predict that the New York rent laws will cease to be laws as soon as the housing problem in New York is satisfactorily adjusted.

Legislative fixing of rents or prices exists only as part of an emergency measure and will give way to sounder economic principles.

(*Special Correspondence to* THE AMERICAN ARCHITECT)

SEATTLE.—With the exception of lumber there have been no price recessions in building materials for the week-end, but stocks of nails and pipe are accumulating and there is in fact no shortage in anything except fine blued nails and cement. Jobbers of building and construction steel state that they would be able to fill any volume of orders even over the present light demand.

To what extent prices of steel will fall next spring, if there are any fluctuations probably will depend upon how strong is the demand beginning at the expected period in March, as jobbers view the situation. Generally no recessions are hoped for. The building program on the Pacific Coast is so far behind, the necessity of providing shelter as one direct method of quieting industrial unrest and bolshevism and the evident simultaneous beginning of an extensive building program will, it is felt, justify the mills to some extent in trying to hold their balance and to prevent the demoralizing pre-war price slides of common knowledge in other products. The attitude of the mills so far, however, has not been that of inviting confidence and co-operation from the jobbing trade, as the posture has clearly been one of indifference.

From the Yakima Valley of eastern Washington, the home of rich irrigated acres and thousands of tons of merchantable apples comes the report this week that architects of Yakima are busy with plans and projects for both city and country to begin early in the spring. Always more lenient than in other parts of the Pacific northwest, banks of Yakima, it is reported here, are prepared to do the necessary financing for the building projects of eastern Washington. Money, it is stated, will be easier and interest rates low and suitable.

Odd lots of small pipe are arriving in every steamer of the Isthmian line, the fleet operated by the Steel Corporation, and stocks are now fairly lberal.

Lumber prices suffered this week by a drive of one of the larger Washington mills, spurred on by heavy accumulated dry stocks. Orders for 30,000,000 feet of fir to move east on spot delivery were taken before the price list promulgated for the purpose by mail and telegraph was withdrawn. This business was taken on a basis to the trade of $13 for common dimension, $29 for slash grain flooring, and $16.50 for boards and shiplap. Much of this business went at what is known as "Rail B" list, or the list authorized by the Baruch committee during the war. The market has never before gone to this level since the list was issued, but common dimension sold at $5 under it, and boards and shiplap at $3 less.

Fir lumber stocks accumulated in West Coast yards will be ample for any strain that may be put upon them next spring by the eastern building trade. These stocks in many of the mills run from 20,000,-

000 to 120,000,000 feet to each mill. Their presence is of a bearish nature, as it is felt certain, if the usual course is pursued by the mills, prospective new orders would upset the market and cause a broken-dike plan of getting these orders on the books. It would be a sink-or-swim proposition.

Shingles are weak. Practically all the mills are down. The date of resumption is not known. Standard stars are $2.50 to $2.60 and clears $2.90 to $3. Clears at one time last season were $7.60.

(Special Correspondence to THE AMERICAN ARCHITECT)

CHICAGO, December 4.—The week just ending has merely lent emphasis to the monotony of dullness which prevails in the Chicago building industry. Various factors making up the industry apparently have decided that the cost of labor and materials is still too high and plans are being held in abeyance until the beginning of the new year, which is the date psychologically hit upon as the time for the resumption of general activity in all industrial lines in Chicago.

The interest in future building projects would seem to be increasing and here and there are straws in the wind that indicate the hope of enlarged activity after the first of the new year. At the present, however, the industry is becalmed in the doldrums of general industrial apathy.

Just what effect the fact will have on building does not seem certain but the fact is that there is an increasing volume of unemployment throughout industrial Chicago. Production is being shortened in many lines and many large plants, which have been running night and day almost since the opening of the war period are now reducing their production, closing less essential departments and letting off men. With one or two exceptions, the bigger industries have been as eager to retrench as the smaller lines of business. There is the ever-present feeling, however, that conditions are thoroughly stable and that no serious and long continued depression can ensue. The attitude of the industrial chief seems to be that of the man in the street which is merely that of waiting and watching to see what the future will bring forth. "After the first of the year" is getting to be the common excuse for any year-end planning in industrial and business lines.

Meanwhile the housing shortage, the high rent situation, lack of office and factory space continue to be as acute as ever. The most recent report of the Seventh Federal Reserve Bank, located in Chicago says: "It is estimated that $150,000,000 in building projects are being held up in Chicago because of the high cost of materials and difficulty in obtaining money for construction purposes. Those engaged in building lines estimate that about 50 per cent. of the men are out of work.

While the labor situation is very much easier than a few months ago there has been no important shrinkage in the past week or so in the various building materials, so far as the local situation is concerned. Some interest is felt locally in the meeting of the dealers and manufacturers of face brick, now in session at French Lick Spring, Indiana and attended by many in the industry from Chicago. Word comes from the meeting that all hands are thoroughly optimistic as to the building prospects for 1921 but little is being said, in the public prints, at least, as to the price situation for the incoming year, although indications are that there will be a material reduction if labor and coal, the chief items of expense entering into the manufacture of face brick take the expected decline.

Even at present prices, however, brick and other materials, are reported as being lower in prices in Chicago than in other important cities. Statistics on this point, from a construction survey issued by the F. W. Dodge Company may be of interest. The comparison follows:

	N. Y.	Chi.	Det.	St. P.	St. L.
Brick, com., per M., on job	$20.00	$16.00	$20.00	$24.00	$22.00
Cement, per brl.	4.10	2.35	2.71	2.71	3.00
Sand, cu. yd.	2.00	2.75	2.50	1.00	1.65
¾-inch gravel	3.25	2.75	2.76	2.15	1.65
1½-inch gravel	3.25	2.75	2.76	1.85	1.60
¾-inch crushed stone	2.90	2.75	2.77	2.15	2.60
1½-inch crushed stone	2.75	2.60	2.77	1.85	2.60

New York brick prices are for truck loads delivered on job. Add $1 to cement quotations for cloth bags, 4 to the brl. with refund of 25c for each bag returned. Add 25c for paper bags and the bulk price is 5c lower than the quotation above.

In materials, some slight reductions are noted of late. Mixed paints and varnishes are lower by forty or fifty cents per gallon than the price which has prevailed for some months. The reduction, which was reported following a recent meeting of manufacturers and dealers in New York is not sufficiently deep to satisfy the trade, in view of the lowered price of linseed oil and white lead and it is thought that a further reduction is not entirely out of question.

Price reductions have also been recently announced in asphalt shingles and prepared roofing by important manufacturers. The reduction on asphalt shingles is in the neighborhood of 33 per cent. as compared with former quotations while the cut on roll roofing ranges from 20 per cent. to 30 per cent. depending upon weight and quality.

There is the expectation, bolstered by a strong feeling of hope, that further reductions in materials will have been made before heavy building operations start in the spring. Whether lumber will share the general decline is a matter of speculation. Dealers in lumber say that the lumber industry has already absorbed the shock and has taken its losses and that any heavy buying such as is made certain by any building boom will have the tendency to drive prices upward, rather than downward.

Considerable importance is nowadays attached to

XUM

any building news in Chicago. Items of construction which formerly escaped notice in the general activity are now being heralded from the housetops as indications that the building industry is not dead, but merely lethargic for the time being.

Some of these stray bits of encouraging news are worth repeating in this review, and so they are set down in brief paragraphs thus:

Work is to start at once on a sixty apartment flat building at Clark street and Deming place. The cost, including the site, will be in the neighborhood of $300,000. Axel V. Teisen is the architect and the matter is of special interest because it is the first large apartment building to be launched recently.

The newly completed Drake Hotel on the aristocratic northshore, in the exclusive Edgewater district, is to be formally opened December 31. Rooms and apartments in the new hotel are now being occupied.

Contracts for the steel materials to be used in the construction of the new Federal Reserve Bank Building are shortly to be awarded, it is reported. Excavation work for this building, which will be at Jackson boulevard and LaSalle street is practically complete.

A house-building boom is said to be opening in Winnetka, one of the better suburbs along the north shore above Chicago. Forty new houses of the better suburban type are said to be under construction there. The report comes from W. A. Gibbons, commissioner of public works in that suburb.

The North Central Association, which is a group of property owners along the Michigan Boulevard extension, now known locally as "Upper Michigan Avenue" has as its basic idea "Save Upper Michigan Avenue." The salvation in this instance will be accomplished by excluding undesirable lines of business from the newer section of the boulevard.

The "Own Your Home" Exposition which is being arranged in Chicago has been endorsed by the Chicago Paint, Oil and Varnish Club, which includes in its membership, the principal manufacturers and dealers in those allied lines in Chicago.

Building permits for the week ending November 27, showed a gain over the corresponding week in 1919, both in the number of permits issued and the value of the contemplated building. Last week, there were 79 permits issued, representing a total valuation of $4,334,800. For the same week in 1919, 57 permits were issued, the valuation being $1,173,900.

Prices in the lumber and materials field remain around last week's level, with no particular activity in either line, although a better inquiry is reported in both. Prices are as follows:

Yellow pine:—B. & B. 1 in., $95 to $130; 13-16, 3¼ flat flooring, $85 to $90; 2 by 4, 10 to 16 feet, No. 1 long leaf, $51; 2 x 6, $48 to $49; 2 x 8, $49 to $50; 2 by 10, $52 to $54; 2 by 12, $54 and $56.

Northern Hardwoods, carload lots, Chicago:

Birch, four ¼ No. 1 and 2, $155; select, $130 to $138; No. 1 common, $95 to $100; No. 2 common, $60 to $65; No. 3, $35 to $40.

Hard Maple, four ¼ No. 1-2, $135 to $140; select, $115 to $120; No. 1 common, $95 to $100; No. 2, $60 to $65; No. 3, $32 to $50.

Red gum four ¼ No. 1 and 2, $148 to $152; No. 1 common, $88 to $92; No. 2, $43 to $47.

Birch, four ¼ No. 1 and 2, $155 to $160; select, $130 to $139; No. 1 common, $95 to $100; No. 2, $60 to $65; No. 3, $35 to $40.

Douglas fir, 12 by 12, No. 1 up to 32 feet, $65 to $75; 14 by 14, $68 to $75; 16 by 16, $70 to $75; 18 by 18, $75 to $80.

Cement:—Universal, $3; Lehigh, $3.50; Portland, $3.50.

Bulk lime, $1.70 to $1.90; face brick, octagons, $68 to $75; fire brick, $32 to $40; 12 in. .24 to .27, 18 in. .46 to .54.

Crushed stone gravel $3.40 to $4; lake and bank sand-torpedo, $3.40 to $4.